A QUALITATIVE AND QUANTITATIVE EXPLORATION OF SECONDARY SEXUAL ABSTINENCE AMONG A SAMPLE OF TEXAS A&M UNIVERSITY UNDERGRADUATES

A Dissertation

by

CATHERINE NELL RASBERRY

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

May 2006

Major Subject: Health Education

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Approved by:

Chair of Committee,	Patricia Goodson
Committee Members,	B.E. (Buzz) Pruitt
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ABSTRACT

A Qualitative and Quantitative Exploration of Secondary Sexual Abstinence among a Sample of Texas A&M University Undergraduates. (May 2006)

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Chair of Advisory Committee: Dr. Patricia Goodson

This dissertation explored the prevalence of and predictors of secondary sexual abstinence (following sexual initiation) in a sample of Texas college students. A qualitative phase of research (N=20) was conducted through face-to-face interviews, and data provided the foundation for development of a web-based survey administered to a sample of 1,133 undergraduates during the quantitative phase of the research. Data produced several key findings. When explaining motivations for secondary abstinence, interview participants most commonly mentioned religion, but also cited fear of physical consequences, past negative experiences with sexual activity, wanting to "save" sex for the right person, desire to honor a partner's wish to abstain, desire to maintain power in a relationship, and identification of dissonance between personal values and behavior. Participants described religious factors, friends, parents/family, avoidance of physical consequences, feelings about self, success in school, support from partner, and lack of current temptation as supportive of abstinence. Friends, alcohol consumption, perceptions of sex being widely accepted, and physical attraction and opportunity for sexual activity were considered non-supportive or hindering. Quantitative survey results

revealed a 12.5% prevalence rate of secondary abstinence. Predictors of secondary abstinence (following sexual initiation) included positive attitude toward abstinence (OR=1.010; p=.002), subjective norm supporting abstinence (OR=1.010; p=.001), greater religious ties (OR=1.019; p=.046), and previous negative sexual experiences (OR=1.051; p=.020). Participation in an abstinence education program significantly reduced the likelihood of secondary abstinence (OR=.572; p=.049). Fewer perceived barriers (β=-.331; p<.000), less environmental manipulation (β=-.230; p=.035), and greater religious ties (β=.301; p=.003) were significant predictors of self-efficacy for abstinence. Terminology for secondary abstinence was explored in both phases. Qualitative data revealed "virgin," "secondary virgin," "renewed virgin," "born-again virgin," and "abstinent" were terms used for secondary abstinence. Quantitative data revealed "born-again virgin" was the most familiar term, but secondary abstainers most often described themselves as "abstinent" (49.3%). Findings provide an estimate of secondary abstinence prevalence in this sample, supply insight into motivations for the practice, and suggest focal points for future research (including impacts of abstinence education on sexually experienced youth).

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CHAPTER I

INTRODUCTION

The purpose of this dissertation was to explore the experiences of college students with *secondary abstinence*, a commitment to abstinence following initiation of sexual activity (Loewenson, Ireland, & Resnick, 2004; Thomas, 2000). This purpose was accomplished through two main phases of research. In the first phase, a qualitative study was used to explore experiences with secondary abstinence (in particular, motivating, supportive, and hindering factors), and terminology used to describe the practice. Data from this initial phase were used as a foundation for a second, quantitative phase of research designed to establish the prevalence of secondary abstinence, test a theoretical model of hypothesized correlates, and examine the terminology most often used to describe secondary abstainers.

Increased federal funding for abstinence-only-until-marriage programs over the last several years has led behavioral scientists to devote increased attention to youth sexual activity and abstinence (Bassett et al., 2002; Marx & Hopper, 2005; Rosenberg, 2002; Stewart, Shields, & Hwang, 2003; Thomas, 2000; Wiley & Terlosky, 2000). Such programs provide a seemingly logical recommendation for youth to reduce health risks. Through the practice of sexual abstinence, adolescents can reduce the number of lifetime

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This dissertation follows the style of *The Journal of Sex Research*.

partners and non-monogamous partners, as well as limit exposure to behaviors that put them at risk for pregnancy and sexually transmitted infections (STIs).

While sexual abstinence has the potential to reduce risky sexual behaviors among youth (such as multiple partners and unplanned pregnancies), empirical research does not yet support the effectiveness of the type of abstinence-only programs currently funded by federal monies (Kirby, 2001; Marx & Hopper, 2005). Furthermore, there is little, if any, research that examines the effects of presenting abstinence messages to youth with sexual experience. Is it appropriate to promote abstinence-only behavior for such youth? Although abstinence programs are often built upon the assumption that sexually active adolescents can, and will, commit to abstinence following sexual initiation, there is little scientific data on this phenomenon.

Although several scholars have alluded to the *secondary abstinence* construct (Erulkar, Ettyang, Onoka, Nyagah, & Muyonga, 2004; Haglund, 2003; Norris, Clark, & Magnus, 2003; Paradise, Cote, Minsky, Lourenco, & Howland, 2001; Simbayi, Chauveau, & Shisana, 2004; Thomas, 2000), Loewenson and colleagues (2004) are among the only researchers to provided empirical data regarding its actual practice among adolescents. In their study of Minnesota 9th and 12th grade students, they found a prevalence rate of 7.8% among the "sexually experienced" youth in their sample (Loewenson et al., 2004). This finding appears to be one of the only estimates of the prevalence of *secondary* abstinence in the scientific literature to date.

That study was also the only one identified, to date, examining adolescents' reasons for practicing *secondary* abstinence (Loewenson et al., 2004). The researchers

found that youths' reasons included fear of negative consequences and "normative beliefs about the appropriateness of having intercourse" (Loewenson et al., 2004, p. 213), which were similar to motivations for *primary* abstinence (never having had sex). In spite of this similarity, however, the investigators pointed out that the *secondary* abstainers' reasons for abstinence were chosen from a listing of responses compiled originally for *primary* abstinence. Respondents may have believed different motivators were responsible for *secondary* abstinence, but these were not response options (Loewenson et al., 2004).

Rather than focusing specifically on *secondary* abstinence, much of the research on adolescent sexuality has examined antecedents of initiation of sexual intercourse (Kirby, 1997, 2002; Zimmer-Gembeck, Siebenbruner, & Collins, 2004), and to a lesser extent, reasons for *primary* abstinence (Bassett et al., 2002; Dunsmore, 2005; Lammers, Ireland, Resnick, & Blum, 2000; Loewenson et al., 2004). Multiple factors have been linked to *primary* abstinence, including socio-economic status (Lammers et al., 2000; Oman, Vesely, Kegler, McLeroy, & Aspy, 2003), household composition and parental education (Carvajal et al., 1999; Lammers et al., 2000; Oman et al., 2003), fear of pregnancy or STIs (Blinn-Pike, 1999; Dunsmore, 2005; Loewenson et al., 2004), parental influences (Bassett et al., 2002; Lammers et al., 2000; Paradise et al., 2001), individuals' values (Blinn-Pike, Berger, Hewett, & Oleson, 2004; Paradise et al., 2001), and different dimensions of religiosity (Bassett et al., 2002; Dunsmore, 2005; Lammers et al., 2000; Oman et al., 2003). Qualitative research has identified "future orientation," beliefs about "positive outcomes of abstinence," fear of a "physical/sexual relationship,"

"concerns related to social responsibility," "fear of emotional/moral consequences," and the desire for control in a relationship as motivators for *primary* abstinence among a sample of college students (Dunsmore, 2005, p. 19-21).

While some empirical evidence is available regarding *primary* abstinence, there is still an overwhelming gap in the literature when one considers the abundance of research reporting on adolescent sexual activity and antecedents of sexual initiation. This state of affairs has led several scholars to suggest that abstinent youth have been overlooked by investigators, and has led some scientists to describe abstinence research as "still in its infancy stage" (Norris et al., 2003, p. 143).

The current report begins to fill the gap in research regarding abstinence in general, and *secondary* abstinence, specifically. This study provides an estimate of the prevalence of secondary abstinence in a sample of college students, a more thorough examination of the factors linked to its practice, and a description of the terminology often used to describe secondary abstinence.

The document is organized into six chapters (with chapters II-V intended to stand alone as manuscripts to be submitted for publication) and two appendices. This first chapter provides an overall introduction to the content that follows. Chapter II contains a systematic literature review of the factors associated with abstinence. Due to the limited amount of research on secondary abstinence, the review was expanded to examine both primary and secondary abstinence.

Chapter III presents the results and discussion of the motivations for secondary abstinence revealed through qualitative interviews. The chapter also includes a

discussion of supportive and hindering factors that influence abstinent behavior, as well as a theoretical treatment of the themes and variables that emerged from the data.

The fourth chapter reports the implementation and findings of a web-based survey conducted with a large sample of undergraduates. Alongside descriptions of the development of the web-based instrument, Chapter IV presents results of testing for differences between primary and secondary abstainers on a number of variables, and testing a model with predictors of both primary and secondary abstinence. In addition, this chapter contains an estimate of secondary abstinence prevalence for the sampled group.

Chapter V provides results from both qualitative and quantitative data regarding terminology used for secondary abstinence. Data from face-to-face interviews with a sample of college students explain the language participants had heard used to describe others who practice secondary abstinence as well as the ways in which they described themselves. These data are supported by results from quantitative survey items addressing the same concepts and assessing the prevalence of use of specific terminology.

Chapter VI provides a general conclusion to the project as a whole, and it is followed by appendices that provide further detail to specific concepts. Appendices include Appendix A (Pilot Test Exploratory Factor Analysis and Reliability Analysis Results to Support Division of the *Motivation for Abstinence* and *Religious Ties* Scales) and Appendix B (Response Rates for Phase 2 Quantitative Data Collection).

CHAPTER II

A SYSTEMATIC LITERATURE REVIEW OF ADOLESCENT PRIMARY AND SECONDARY SEXUAL ABSTINENCE

Overview

In recent years, many researchers have examined reasons for adolescent sexual activity and abstinence (DiIorio, Dudley, Soet, & McCarty, 2004; Kirby, 1997; Santelli et al., 2004), partially due to increased debate over the most appropriate type of sexuality education and abstinence programming for youth (Wiley, 2002). Because sexually abstinent behavior has the potential to reduce health risks (through fewer lifetime partners, fewer non-monogamous relationships, and delayed initiation of intercourse) and also because the federal government has funneled more and more funding into abstinence-only-until-marriage programs (Bassett et al., 2002; Marx & Hopper, 2005; Rosenberg, 2002; Stewart et al., 2003; Thomas, 2000; Wiley & Terlosky, 2000), recent research has focused specific attention on the initiation of sexual activity (Forste & Haas, 2002; Kirby, 2002; Meier, 2003; Miller et al., 1997; Santelli et al., 2004).

In spite of this increased interest, it remains difficult to find a single resource synthesizing (systematically) the antecedents of sexual abstinence. Instead, the most accessible information is related to antecedents of sexual activity. In a rare report published by the National Campaign to Prevent Teen Pregnancy (Kirby, 1997), antecedents of sexual behavior are classified into three categories: *biological factors* such as age, gender, hormone levels, and timing of puberty; *social factors* such as

violence, poverty, unemployment, family and parental characteristics, little parental supervision, pressure and abuse, lack of religious ties, and other problem behaviors; and *intrapersonal factors* such as attitudes, beliefs, and intentions regarding sexual behavior.

Many scholars have suggested that abstinent youth often have been overlooked by researchers. Some scientists have described research on sexual abstinence in adolescents as "still in its infancy stage" (Norris et al., 2003, p. 143), and others have suggested that studying abstinent youth would represent a positive focus on protective rather than detrimental influences (Blinn-Pike, 1999; Blinn-Pike et al., 2004).

In addition, evidence from evaluations of abstinence-only-until-marriage programs suggests that sexually abstinent behavior, while encompassing avoidance of sexual behavior, may have other dimensions as well (Goodson, Suther, Pruitt, & Wilson, 2003). In the study by Goodson and colleagues (2003), over 80% of participants cited positive elements (incorporation of positive values/attitudes, acceptance of abstinence as a viable option, use of internal management to remain abstinent, and perception of abstinence as a vehicle for investing in the future) in addition to avoidance of some form of sexual behavior when defining the term 'abstinence'.

If definitions of abstinence comprise multiple dimensions, it is logical to assume that multiple influences are associated with abstinent behavior – possibly influences beyond those associated merely with the avoidance of sexual activity. Given that some (albeit a small amount) of evidence supports the notion that – conceptually and experientially – abstinence is more than simply the absence of sexual behavior, abstinence may well constitute a unique and distinct behavior, in and of itself (Goodson

et al., 2003). For this reason, there are benefits to focusing research specifically on youth sexual abstinence and its antecedents, rather than assuming that the predictors of abstinence are simply reversed antecedents of sexual behavior.

Purpose

Literature reviews have been conducted to examine the body of evidence regarding factors associated with sexual activity, but the author was unable to identify any reviews that focused specifically on the antecedents of sexually abstinent behavior among adolescents.

The overarching purpose of this systematic literature review is to compile factors associated with adolescents' practice of abstinence – both primary abstinence ["refraining from sexual intercourse by an individual who has never experienced it" (Thomas, 2000, p.5)] and secondary abstinence ["discontinuation of sexual intercourse among those already sexually experienced" (Thomas, 2000, p. 5)]. This compilation focuses on systematically organizing findings from empirical studies published in peer-reviewed journals between 1996 and 2005, and critically assessing the methodological quality of this body of knowledge.

Method

This systematic review of literature examining factors associated with sexual abstinence was conducted using the Matrix Method, a method for synthesizing published research that guides the collection and organization of important information from studies in a purposeful way (Garrard, 1999). A review matrix was developed containing

descriptive comments for multiple aspects of each study, including elements related to the rigor and quality of the research (described in the "instrument" section below).

Inclusion and Exclusion Criteria

Inclusion was limited to studies focusing specifically on factors associated with abstinent behavior (as opposed to sexual activity). This focus was determined based on review of titles and abstracts. Included articles were empirical studies published between 1996 and 2005 in peer-reviewed scientific journals. Studies using secondary data sets were included if the data analysis was the original work of the authors. Participants in included studies had to be of middle school, junior high, high school, or traditional college age.

Exclusion criteria included studies published in a language other than English or that contained data from non-USA adolescents. Theoretical articles, commentary articles, and review articles also were excluded from this review. Furthermore, articles with the primary focus of determining factors associated with, or predictive of, sexual activity or sexual initiation were excluded, as were articles focused on the evaluation of a particular program or curriculum.

Variations on the terms sexual, abstinence, secondary abstinence, and virgin were used to search the following databases: AIDS and Cancer Research Abstracts, Communication Studies: A SAGE Full-Text Collection, ERIC, MEDLINE, Psychology: A SAGE Full-Text Collection, PsycINFO, Safety Science and Risk, Social Services Abstracts, and Sociology: A SAGE Full-Text Collection.

Searches resulted in 900 reports, 8 of which met the inclusion and exclusion criteria. In addition, 1 study was identified for inclusion through the reference lists of previously identified studies. The final sample consisted of 9 studies – denoted in a separate list prior to the reference section of this paper.

Instrument

An abstraction form was used to collect information from each report and to assign a quantitative score for each study's methodological quality. A 20-point scale for the methodological quality assessment was constructed based on several important methodological characteristics. The following criteria were used to calculate overall methodological scores (through summing of points for each criterion): having a conceptual definition of abstinence (1 point), reporting the study's data reliability (1 point), reporting data validity (1 point), positing a theoretical framework (no theory or weak theory received 0 points, thorough explanation but no specific theory received 1 point, and a specified theoretical base received 2 points), the study's paradigm (qualitative or quantitative studies received 1 point and studies using mixed-method approaches received 2 points), study design (cross-sectional studies received 1 point and longitudinal studies, 2 points), sample size (<100 = 1 point; 100-300 = 2 points; >300 = 3 points), sample design (convenience samples received 1 point, random but non-national samples received 2 points, and random and national samples received 3 points), data analysis (qualitative analysis and/or univariate analyses received 1 point, bivariate analyses, 2 points, and multivariate analyses, 3 points), use of statistical controls (1 point), and controlling for experiment-wise error (1 point). A matrix of these elements

of methodological quality, based on information gathered in the abstraction form, can be found in Table 2.1.

Analyses

Analyses were designed to examine the association between various factors and abstinent behavior in youth, the dependent variable. In order to effectively analyze the data, results were separated into findings by empirical tests. For example, if two separate regression models were used to determine predictors of abstinence for two groups of respondents (for example, one model for males and one model for females), results from each model were treated as a single finding (or the result of a single test). In such cases, or for studies presenting multiple findings with increasing levels of statistical rigor, only the results associated with the most rigorous tests were selected for reporting in this review. Each variable found associated with abstinence was classified as demographic, intrapersonal, interpersonal, or behavioral. SPSS® was used to calculate Pearson product moment correlations to explore possible associations between methodological quality score and category of finding (demographic, intrapersonal, interpersonal, and behavioral).

Results

Sample Characteristics

The sample consisted of 9 studies (8 that addressed primary abstinence only; 1 that examined primary and secondary abstinence) containing a total of 14 empirical tests yielding 58 factors identified as correlates of abstinent behavior.

Table 2.1. Matrix of the Purposes, Methods, Findings, and Methodological Quality Scores (MQSs) of Nine Reviewed Studies

ID #	Citation	Purpose or Research Question(s)	Sample – Design and Size	Ages and/or Grade Levels of Sample	Findings – Factors associated with, or predictive of abstinence	MQS
1	Blinn-Pike, Berger, Hewett, & Oleson (2004)	"The goal… was to track abstinent early adolescents and chart those protective factors that predicted who remained abstinent over 18 months" (p. 496).	Longitudinal; Convenience; N=568	avg. 14.58	**Factors predictive of remaining abstinent over 18 months:** having conservative values concerning sex before marriage, being male, not drinking alcohol	15
2	Oman, Vesely, Kegler, McLeroy, & Aspy (2003)	The purpose "was to develop a profile of variables related to youth sexual abstinence using youth assets, community factors, and youth and parent demographics as potential profile variables" (p. S81).	Cross-sectional; random, non-national; n=1253	avg. 15.4	**For 13-14 year olds:** peer role models, family structure (1 or 2 parent household), household income, parental education. **For 15-17 year olds:** use of time (religion), peer role models, aspirations for the future, non-parental adult role models, good health practices. **For 18-19 year olds:** use of time (religion), community involvement asset, neighborhood safety, youth race (non-Hispanic African American and Native American), household income.	14
3	Bassett, Mowat, Ferriter, Perry, Hutchinson, Campbell, et al. (2002)	"to explore the relationship between Christian commitment and premarital sexual permissiveness among Christian College students…" paying "special attention to… *why* Christians might abstain from premarital sexual intercourse and *what* might be the implications of different reasons for abstaining" (p. 122).	Cross-sectional; Convenience; N=118	avg. 20.6; college	**For those with intrinsic faith** ("highly committed and who attempt to live their faith"), faith and values, practical relationship issues. **For those with extrinsic-personal faith** (tend to "seek comfort/security in religion during difficult times"), practical relationship issues, mommy & daddy. **For those with quest faith** ("characterized by qualities of searching, questioning, and openness"), practical relationship issues, faith and values (inverse correlation)	11
4	Lammers, C., Ireland, M., Resnick, M., & Blum, R. (2002)	Tested the hypothesis that "protective factors identified for other health compromising behaviors are also protective against onset of sexual intercourse" (p. 42).	Cross-sectional; random, non-national; n=26,023	7^{th}-12^{th} grades	**Multivariate Survival Analyses:** dual-parent families, higher SES, residing in rural areas, higher school performance, concerns about the community, higher religiosity, high parental expectations (for males only)	12
5	Blinn-Pike (1999)	"First, what reasons do abstinent adolescents give for not becoming sexually active? Second, what are the underlying dimensions of adolescents' reasons for not being sexually active? And third, how do adolescents differ in their reasons for being abstinent based on individual (alcohol use, school grades, age), cultural (race, gender), and environmental (family structure, father's education, and urbanicity) factors related to resiliency?" (p. 297)	Cross-sectional; Convenience; N=697	8^{th}-10^{th} grades	**Most frequent reasons:** fear of AIDS, fear of becoming pregnant or getting someone pregnant, fear of getting a disease	12

Table 2.1 Continued.

ID #	Citation	Purpose or Research Question(s)	Sample – Design and Size	Ages and/or Grade Levels of Sample	Findings – Factors associated with, or predictive of abstinence	MQS
6	Loewenson, Ireland, Resnick (2004)	The purpose was "to assess reasons for choosing not to have sexual intercourse among two groups: virgins (primary abstainers) and already sexually experienced youth (secondary abstainers)" (p. 209).	Cross-sectional; Convenience; N=73,464	Ages 11-20; 9^{th}-12^{th} grades	Rates: boys - 64% primary, 3% secondary; girls - 68% primary, 2% secondary Most frequently endorsed reasons for abstinence: fear of pregnancy (most common), fear of other adverse consequences (STIs, parental disapproval, getting caught), normative beliefs about the appropriateness of having intercourse.	12
7	Paradise, Cote, Minsky, Lourenco, & Howland (2001)	The purpose was to "investigate girls' reasons for deciding to have or not to have sexual intercourse" (p. 404).	Cross-sectional; Convenience; N=197	Ages 14-25	Rates: 20% (n=40) virgins; 13% (n=25) inactive past 3 months (no vaginal or anal sex); 67% (n=132) active Virgins significantly more likely than inactive to cite: not the right thing for me now, waiting until I am older, waiting until I am married, family would not approve	7
8	Carvajal, Parcel, Basen-Engquist, Banspach, Coyle, Kirby, et al. (1999)	The purpose was "to investigate the relationships between a range of determinants on delay of initiation" (p. 444).	Longitudinal; random, non-national; N=827	median age, 15	Predictors of delay of onset of intercourse: more positive attitudes towards refraining from sexual intercourse, more positive norms about refraining from sexual intercourse, having a parent that graduated from college	16
9	Donnelly, Goldfarb, Duncan, Young, Eadie, & Castiglia (1999)	This study "examined attitudes as a predictor for sexual abstinence" (p. 205).	Cross-sectional; Convenience; N=839	middle or high school	Females: age (younger), race (Latino & Asian-Pacific), "my family supports & helps me", disagree with "it is alright for 2 people to have sex before marriage if they are in love, disagree with "my friends think it is okay for people my age to have sexual intercourse", disagree with "it's okay for people my age to have children", disagree with "having sexual intercourse is just a normal part of teenage dating", and "sexual abstinence is the best choice"; have good personal qualities (inverse - less abstinence) Males: age, expecting to graduate from high school, disagree with "alright for 2 people to have sex before marriage if they are in love", disagree with "most of my friends have had intercourse", "sexual abstinence is the best choice for people my age when it comes to decisions about sex", disagree with "having sexual intercourse is just a normal part of teenage dating	11

*Reviewed studies are listed by identification numbers immediately before the list of references in this article.

Four studies in this review were published between 1996 and 2000; the remaining 5 studies, between 2001 and 2005. There were no clear trends in publication dates for this sample, despite growing interest and funding for abstinence education since 1996. Publications represented a variety of journals in the health and psychology disciplines. Most journals contained only 1 article for this review, however 3 of the reviewed studies were published in *The Journal of Adolescent Health* (Lammers et al., 2000; Loewenson et al., 2004; Paradise et al., 2001).

Eight studies employed quantitative data analyses, exclusively. One study, however, also included a qualitative component: study participants were involved in generating reasons for abstinence that were subsequently included in the quantitative survey instrument (Bassett et al., 2002).

Three of the indicators examined as evidence of methodological quality included use of a conceptual definition of abstinence, reports of reliability, and reports of validity of data. Although most studies provided operational measures of abstinence (usually a negative response to a question such as "Have you ever had sex?"), conceptual definitions for abstinence were not provided in any of the reviewed studies. Regarding psychometric properties, 6 of the 9 studies (Blinn-Pike, 1999; Blinn-Pike et al., 2004; Carvajal et al., 1999; Lammers et al., 2000; Loewenson et al., 2004; Oman et al., 2003) reported reliability of their data (all reporting Cronbach's alpha, an estimate of internal consistency (Thompson, 2003)), and 6 addressed validity, most often discussed as content validity in the context of factor analyses results (Bassett et al., 2002; Blinn-Pike,

1999; Blinn-Pike et al., 2004; Carvajal et al., 1999; Loewenson et al., 2004; Oman et al., 2003).

When examining the use of theoretical frameworks, reviewed studies were classified into one of three categories: "none or weak explanation," "thorough," or "specific theory." The first two categories encompassed studies that did not specifically report the use of a scientific theory for guiding the inquiry. The "none or weak explanation" category included articles in which authors made absolutely no or very weak attempts to explain why certain variables were examined and/or why certain factors might be related to adolescent sexual abstinence. The "thorough" category included articles in which no theory was specifically named, but authors did provide detailed explanations for any possible links between abstinence and the dependent variables, often referencing other research to support their choice of variables. The third category ("specific theory") included articles in which authors did mention a scientific/social science theory upon which the research was based, and that theory was used to provide explanations as to why and how select variables might be related.

The "no or weak explanation" category applied to 2 studies (7 identified variables/factors) (Loewenson et al., 2004; Paradise et al., 2001), 3 studies were classified as "thorough" (36 identified factors) (Donnelly et al., 1999; Lammers et al., 2000; Oman et al., 2003). The final category included 4 studies (15 identified factors) that acknowledged a specific theory as the basis for the research (Bassett et al., 2002; Blinn-Pike, 1999; Blinn-Pike et al., 2004; Carvajal et al., 1999). One of those studies was founded on a combination of theories rather than a single framework. Theories

from the four studies included: Kohlberg's levels of moral thinking (Kohlberg, 1976), resiliency theory (Masten, Best, & Garmezy, 1990), social cognitive theory (Bandura, 1986), theory of reasoned action (Fishbein & Ajzen, 1975), and theory of planned behavior (Ajzen, 1991).

There were no clear patterns in the use of theory over time when examined year by year, so the percentage of articles in the first 5 years and the last 5 years was examined. All four articles published between 1996 and 2000 were based on thorough explanations or a specific theory (Blinn-Pike, 1999; Carvajal et al., 1999; Donnelly et al., 1999; Lammers et al., 2000). In contrast, however, only three of the five reports published between 2001 and 2005 were based on either thorough explanations or a specific theory (Bassett et al., 2002; Blinn-Pike et al., 2004; Oman et al., 2003). The remaining two articles published in that time were based on either no theory or weak explanation of the relationship between variables (Loewenson et al., 2004; Paradise et al., 2001).

Factors Associated with Primary Abstinence

The reviewed studies identified, collectively, 56 factors associated with the practice of primary abstinence (although several factors appeared in more than one study). Factors fell into 4 categories: demographic characteristics, intrapersonal factors, interpersonal factors, and behavioral factors (see Table 2.2 for the individual results and the studies from which they originated).

Researchers reported 12 demographic factors (several appearing more than once) as being associated with abstinence. These factors included age (being younger),

Table 2.2. Factors Associated with, or Predictive of, Sexual Abstinence Among Adolescents Identified in Nine Reviewed Studies

Category of Factor Specific Factor	# of results	Study ID#
Demographic Characteristics		
parental factors (education level and/or parent composition of households)	4	2,4,8
household income/SES	3	2,4
age (younger)	2	9
gender (being male)	1	1
Ethnicity	1	2
residence in a rural area	1	4
Intrapersonal Factors		
perceived social norms regarding abstinence	6	6,8,9
Religion	4	2,3,4
perceived parental expectations and influences	3	3,4,7
attitudes toward abstinence	6	8,9
personal values	4	1,7
fear – of pregnancy	2	5,6
future orientation	2	2,9
fear – of STIs	2	5
fear – in general (STIs, parental disapproval, getting caught)	1	6
concern for community (alcohol, violence, drugs, etc.)	1	4
perceptions of neighborhood safety	1	2
feelings about self*	1	9
perceived family support	1	9
Interpersonal Factors		
practicality (relationship issues)	3	3
role models	3	2
community involvement asset	1	2
Behavioral Factors		
not drinking alcohol	1	1
good health practices	1	2
better school performance	1	4

*more positive feelings about self were associated with reduced likelihood of practicing abstinence

ethnicity (in one study, being non-Hispanic African American or Native American; in another, being Latina or Asian-Pacific), gender (being male), higher household income/SES, parental factors such as education levels or 1- or 2-parent households, and residence in a rural area.

Intrapersonal elements associated with abstinence encompassed a variety of factors. Some of these were community-focused such as concern for community (regarding drugs, alcohol, violence, etc.) and perceptions of neighborhood safety. Other factors were related to fear: fear of pregnancy, fear of STIs, and fear in general (encompassing STIs as well as parental disapproval and "getting caught"). Other studies found adolescents' perceptions of parental expectations and influences, as well as perceived social norms regarding abstinence, played a role. Additional youth intrapersonal influences included more positive attitudes toward abstinence, personal values supportive of abstinence, various aspects of religiosity, and orientation towards the future (future goals and aspirations).

Some of the factors associated with abstinent behavior were interpersonal in nature. These elements included community involvement and exposure to role models. Furthermore, pragmatic relationship issues (maintaining respect, avoidance of feeling "used," and lowering exposure to STIs) were also cited as reasons for adolescents' decisions to practice abstinence.

Finally, a few of the factors related to youth abstinence were classified as behavioral. These factors included abstinence from alcohol, better school performance,

and good health practices in general. This group of factors was one of the two smallest categories.

It is also important to note, however, that among the 56 identified factors, only two were found to be inversely related to adolescent sexual abstinence. In one study, agreement with "I have good personal qualities" (a self-esteem-related measure) was associated with reduced likelihood of practicing abstinence among female early adolescents (Donnelly et al., 1999). In another study, "faith and values" was associated with reduced odds of practicing abstinence among participants characterized as having "quest faith" – meaning that their faith beliefs were best described by "qualities of searching, questioning, and openness" (Bassett et al., 2002, p. 124).

Factors Associated with Secondary Abstinence

Only 1 study meeting inclusion and exclusion criteria examined secondary abstinence (Loewenson et al., 2004). This study had a dual focus on primary and secondary abstinence. In that study examining 9th and 12th grade youth in Minnesota, researchers found 3% of boys and 2% of girls practiced secondary abstinence. Adolescents' reasons for engaging in secondary abstinence were the same as those proposed for primary abstinence (fear of pregnancy, fear of other adverse consequences – such as parental disapproval, getting caught, and contracting STIs – and normative beliefs regarding the appropriateness of having sexual intercourse), but secondary abstainers endorsed each reason less often than did primary abstainers (Loewenson et al., 2004).

Methodological Quality

For the studies included in the review, methodological quality scores (MQSs) ranged from 7 to 16 out of a total of 20 possible points. The mean MQS was 12.22 (SD = 2.63), approximately 2 points above the mid-point of the scale. The median and mode were (both) 12.

A Pearson product moment correlation was used to test for an association between MQS and classification of results (demographic, intrapersonal, interpersonal, or behavioral). This was examined to determine if studies with either lower or higher methodological quality consistently reported the same classifications of factors linked to abstinence. The test did not reveal a statistically significant correlation.

Discussion

Only a small number of studies focused on abstinent rather than sexually active adolescents. Even though initial database searches revealed hundreds of reports, only 9 of those turned out to be studies that specifically examined abstinent youth. Many of the excluded articles focused on antecedents of adolescent sexual activity, predictors of sexual initiation, factors related to contraceptive use, evaluation of abstinence education curricula, or provided general commentaries related to political aspects of abstinence messages. It appears that the majority of data collected regarding youth sexual behaviors is, in fact, examining sexually active behavior as opposed to abstinent behavior.

Overall, the 56 factors identified as being associated with, or predictive of, primary sexual abstinence among adolescents were collapsed into 25 variables (for

example, six separate factors related to perceived social norms were consolidated into one variable – "perceived social norms regarding abstinence"). Of these 25 broader-category variables, 9 warrant greatest attention as they were the only ones represented in more than one study. These variables included parental characteristics (household structure and education level), higher household income/SES, future orientation, adolescents' perception of parental expectations/influences, fear of pregnancy, perceived social norms regarding abstinence, attitudes toward abstinence, personal values supportive of abstinence, and religion.

Understanding these factors and the mechanisms through which they may influence sexually abstinent behavior among adolescents may offer important insights to health professionals. The demographic characteristics related to SES and parental characteristics are likely limited in their modifiability, but the other factors may provide keys for health educators and other professionals attempting to reduce sexual activity levels among adolescents. Social norms, attitudes, personal values, and perceptions of parental expectation (or even parental influences) might offer points of intervention for program personnel. In some situations (especially in faith-based settings), relevant religious influences might even be stressed.

Finally, fear of pregnancy *might* offer a potential point for intervention – but *only* if approached cautiously. While health professionals should not attempt to scare youth into healthier behaviors, discussion of pregnancy risks might offer a pathway for initiating dialogue about the benefits of abstinence. For the youth with particularly high levels of anxiety about unintended pregnancy, abstinence may be an attractive option.

If, however, a pregnancy-risk approach is used, it is essential that youth perceive the recommended action to be efficacious in lowering or eliminating their risk. The Extended Parallel Process Model suggests that once exposed to messages about recommended behaviors, a person will either try to "control the danger by adhering to the recommendations… or control the fear through defense avoidance or denial, not adopting the recommended action" (Dutta-Bergman, 2005, p. 105). In order to avoid detrimental responses, it is necessary to avoid heightened risk perceptions among youth that might result in excessive fear, which would likely serve to inhibit the recommended actions (Rimal & Real, 2003).

It is, however, important to keep in mind that no variable was identified as related to sexual abstinence among adolescents in more than 3 studies, and only 9 were identified in more than one study. In all, 4 variables were identified in 3 different studies: parental demographic factors and intrapersonal characteristics of perceived social norms regarding abstinence, adolescents' perceptions of parental expectations and influences, and religion. In addition, 5 variables were identified by 2 studies. These included: higher household income/SES, attitudes toward abstinence, fear of pregnancy, future orientation, and personal values supportive of abstinence.

As illustrated here, there were no "universal" variables identified by the reviewed reports. This may be due to the wide age range among participants in the included studies (from middle/junior high school to college) or variations in geographic location, but it is most likely related to differences in the focus and methodologies of each study. Because each research project had slightly different goals and methods, they were often

examining different variables. Therefore, not every study had the potential to capture effects of each factor identified in the review.

In addition, results that were only highlighted by one study should be interpreted with caution – especially due to the limitations inherent in each individual study. For example, one study in this review found being male was associated with abstinence (Blinn-Pike et al., 2004) – a result which is in contrast to the majority of gender-related findings about adolescent sexual activity (Kirby, 2002; Manlove et al., 2002; Santelli & Beilenson, 1992). Blinn-Pike and colleagues (2004) explain their finding by suggesting that higher rates of sexual initiation among the females in their sample were related to the females' alcohol consumption and exposure to significantly older male partners.

Furthermore, it is important to acknowledge that none of the studies in this review used nationally-representative samples. In most instances, study participants were from a single state, and in some cases, all participants were selected from a single school. Due to such limited samples, it is not possible to generalize the findings of any of the individual studies, nor those contained in this review, to youth across the nation. Despite such a limitation, however, the factors identified in this review may offer important "clues" as to what factors are associated with abstinence in different age groups, and provide important direction for further investigation of this topic.

Overall, the average methodological qualities score for the studies in this review was above the mid-point of the quality scale, but only by about 2 points. An average score of 12.22 out of 20 highlights the room for improvement that exists in the quality of research related to adolescent sexual abstinence. Further examination of the elements

comprising the methodological quality score revealed both strengths and weaknesses in this body of research.

In terms of strengths, more than half of the studies included reports of both data reliability and data validity. In addition, seven of the nine studies were based on large sample sizes, and reported results from multivariate analytical techniques. Furthermore, the majority of studies were based on either specific theories or at least thorough explanations.

Although most studies reported use of some form of theory, an examination of trends in theory use reveals an important consideration for future researchers studying youth sexual abstinence. While all of the articles published between 1996 and 2000 were based on thorough explanation or a specific theory, only three of the five published from 2001 to 2005 had that same level of theoretical foundation. While it is important to take into consideration the small size of this sample, it also may reflect decreasing quality of the research. Future researchers should ensure that studies of abstinence are grounded in theory when designing and completing their work.

There were other methodological weaknesses in this body of work as well. For example, none of the researchers presented conceptual definitions for abstinence, the variable around which their research projects were centered, and none made mention of controlling for experiment-wise error. In addition, there was a noticeable paucity of qualitative research on adolescent sexual abstinence. Of the nine studies reviewed, only one included a qualitative component. Additional use of either qualitative or mixed-method designs might offer greater depth to this body of research, as qualitative methods

allow investigators to delve into questions of "why?" with greater detail and are often better able to capture multiple realities and utilize modes of reporting that may be more effective in presenting the co-existing variety of influences shaping participants' beliefs, perceptions, and behaviors (Lincoln & Guba, 1985).

It is also interesting to note the extremely small number of studies that addressed the practice of *secondary* abstinence. Although the search process identified six other studies that *mentioned* the behavior (Erulkar et al., 2004; Haglund, 2003; Loewenson et al., 2004; Paradise et al., 2001; Simbayi et al., 2004; Thomas, 2000), only one study was found that empirically examined factors related to secondary abstinence (Loewenson et al., 2004).

That study (Loewenson et al., 2004) found secondary abstinence prevalence rates of 3% and 2% for males and females, respectively (a total of 7.8% of the youth with sexual experience). This study, however, examined only 9th and 12th grade the youth and was based on a sample from Minnesota schools, most of whom were Caucasian (Loewenson et al., 2004). This single estimate of prevalence cannot be generalized to all adolescents, as rates might differ for groups from geographic regions, ethnicities, and ages.

Assuming that adolescents can – and do – practice secondary abstinence, it becomes important for abstinence and sexuality educators to identify factors that might be related to such a decision. The results of the one study in this review highlighted fear of pregnancy, fear of consequences such as parental disapproval, getting caught, or contracting STIs, and normative beliefs about the appropriateness of having sex as

reasons adolescents practiced secondary abstinence. These were the same as the reasons for primary abstinence, but the study's authors noted that the finding might have resulted from a narrow option of "reasons" provided on the survey. It is possible, they suggest, that there might be motivations unique to secondary abstainers that were not captured in the data (Loewenson et al., 2004).

Limitations

This review makes several important contributions to the adolescent sexual health literature. First, it highlights a set of factors that have been associated with sexual abstinence (both primary and secondary) among youth. Second, it identifies methodological gaps in the current body of research – such as absence of conceptual definitions of abstinence, inconsistent use of strong theoretical foundations, and lack of data based on nationally representative samples – that if improved in future research, could strengthen the quality of empirical evidence on youth sexual abstinence.

This review does, however, suffer from inherent limitations. The first is related to the small sample size. Only 9 studies were found that met inclusion and exclusion criteria. Such a small number of empirical examinations depicts a body of knowledge that is currently in its embryonic stages. The absence of a larger number of studies, despite increased funding to support abstinence education programming in the last decade, is intriguing. Given the recent emphasis on evidence-based education proposed by the federal government (through the Education Science Reform Act of 2002), it is troubling that so few investigators have been motivated to pay closer attention to adolescents' abstinent behavior (National Research Council, 2005; U.S. Department of

Education, 2002). Nevertheless, efforts to systematically review even this small body of literature are important, if only to highlight this impressive void.

A second limitation is potential reviewer subjectivity, given that only the investigator was responsible for abstracting the information from the studies. An attempt was made, however, to control for this element through the use of an objective abstraction form. Assignment of numerical scores to different aspects of the research studies allowed for a more consistent evaluation of methodological quality. The methodological criteria employed in this assessment have been used in other reviews, and were found to be useful in gauging methodological rigor (Goodson, Buhi, & Dunsmore, in press).

Recommendations

Despite such limitations, this literature review is able to point to specific recommendations for future research on youth sexual abstinence. For instance, it may be beneficial for researchers interested in factors that lead to, or are associated with abstinence, to focus their studies specifically on abstinent youth – especially given the paucity of research with this focus compared to that available on sexual activity. Furthermore, additional qualitative studies might help researchers identify specific motivational influences that might be more directly related to the practice of abstinence (conceptualized multidimensionally) than simply absence of sexual intercourse (a single dimension of abstinent behavior). In addition, the concept of secondary abstinence appears to be under-explored, and future research could determine whether factors

associated with its practice differ from those associated with primary abstinence and if they do, what is the extent of the difference.

CHAPTER III

A QUALITATIVE EXPLORATION OF MOTIVATIONS FOR SECONDARY ABSTINENCE AMONG A SAMPLE OF COLLEGE UNDERGRADUATES

Overview

In recent years, increased attention has been placed on abstinence-only or abstinence-only-until-marriage programs, partially due to the large amount of federal funds poured into such efforts (Bassett et al., 2002; Marx & Hopper, 2005; Rosenberg, 2002; Stewart et al., 2003; Thomas, 2000; Wiley & Terlosky, 2000). At first glance, the programs seem sensible, given that consistent practice of abstinence can lead to the reduction of many sexual health risks. With fewer lifetime partners, fewer non-monogamous partners, and less overall exposure to activities that increase sexually transmitted infections (STI) and unintended pregnancy risk, abstinence is often considered a "healthy" behavior.

Even so, there is debate over what, if any, effects abstinence-only programs might have upon adolescent sexual behavior or intentions. Currently, the effectiveness of such programs is not supported empirically (Kirby, 2001; Marx & Hopper, 2005), but recent research supports the impact of "private" virginity pledges (rather than public, formal ones) in reducing likelihood of oral sex or sexual intercourse among adolescents (Bersamin, Walker, Waiters, Fisher, & Grube, 2005). Even if some types of virginity pledges appear to influence risky sexual behavior of already-abstinent youth, an

important question remains: do these programs affect sexually active youth, leading them to commit to sexual abstinence after having initiated sexual activity?

While many youth will remain sexually active after initiation (Thomas, 2000), abstinence-only program personnel often operate under the assumption that adolescents who are sexually active can, and will, transition to abstinence upon their exposure to information on the negative consequences of early sexual engagement (Hancock & Powell, 2001; Worth Waiting For, 2002). Unfortunately, this assumption has not been adequately addressed through empirical research. The practice of abstinence after having initiated intercourse (and often after maintaining sexual activity for some period of time) has been named *secondary abstinence* (Loewenson et al., 2004; Thomas, 2000), and if it *is* practiced, understanding the reasons for its practice could prove insightful for health educators and program personnel.

To the best of our knowledge, only a single study has examined secondary abstinence and the reasons youth cited for its practice (Loewenson et al., 2004). The study, founded on research of *primary* abstinence, found fear of negative consequences and "normative beliefs about the appropriateness of having intercourse" motivated decisions to practice secondary abstinence (Loewenson et al., 2004, p. 213). Results, however, were limited by a narrow list of options furnished by the researchers to the participants from which they could select their "reasons for abstinence." The authors themselves suggested response options may have been inadequate to capture the full range of influential factors for secondary abstainers (Loewenson et al., 2004).

Purpose

The purpose of this study was to explore qualitatively college students' motivations for practicing *secondary sexual abstinence* (the transition from sexual activity to sexual abstinence). Particular attention was directed toward students' perceptions of factors that supported or hindered this behavior and mechanisms that sustained their commitment to abstinence. Data gathered in this study were also used as the foundation for subsequent development of a survey instrument (data not shown here).

Method

Participant Recruitment

Following approval by the Institutional Review Board for the Protection of Human Subjects, the investigator recruited participants by attending several Kinesiology classes at a large university in Texas to explain the study and seek participation. Students were given forms on which they provided their names and e-mail addresses. The study was explained, and students indicated their eligibility and willingness to participate. Eligible and willing students were subsequently contacted for interviews, and remaining forms were destroyed.

Male and female undergraduates between the ages of 18 and 24 were eligible to participate if they had been "sexually active in the past, but were not currently sexually active." During interviews, students were asked to refer other possible participants, although only one interview was secured in this way. Interviews were continued until theoretical saturation had been reached. There was no compensation for participation.

Interview Procedures

Participants were interviewed face-to-face, and interviews were audiotaped (except when participants specifically requested they not be). Moreover, the principal investigator also took hand-written field notes on responses and observations of nonverbal cues. All interviews were conducted on campus, and lasted from 30 to 75 minutes.

Participants were asked to describe their experiences with secondary abstinence, their motivations for choosing abstinence, and various beliefs and attitudes regarding the concept of "secondary virginity." Responses were elicited through the use of a previously constructed interview guide, and the use of an "emergent design" provided flexibility for exploring interesting facets that surfaced during interviews (Lincoln & Guba, 1985, p. 225). This approach to naturalistic inquiry facilitated a dynamic process by which explanations between concepts emerged throughout the study, and the researcher's flexibility permitted the interviews to be shaped as necessary to enhance understanding of the study's focus (Lincoln & Guba, 1985; Strauss & Corbin, 1998).

All data remained confidential. Participants' names were not included on transcripts – identification numbers were used on written records, and names and/or personal identifiers were not included in any written, presented, or published accounts of the interview data.

It is also important to note that a qualitative researcher serves as the tool for data collection rather than depending solely on paper-pencil tests or instruments (Lincoln & Guba, 1985). Because the investigator *is* the instrument, it is beneficial to explain any

biases or predispositions possibly introduced by the use of a human tool (Patton, 2002). In this study, the researcher (with experience in college health education) began the research anticipating difficulty in identifying potential participants, expecting rates of secondary abstinence to be low, and expecting participants to cite multiple reasons for the behavior. Due to her own expectation that religiosity might play a role in secondary abstinence, the researcher avoided sharing her personal beliefs with the participants so as not to shape their responses. In addition, she entered into data collection comfortable with a variety of sexuality-related topics (due, in part, to experience teaching college-level human sexuality courses), thus allowing her to respond calmly as participants shared multiple aspects of their sexual histories.

Analysis

Within 24 hours of each interview, the investigator prepared full-length, typed transcripts based on audio recordings and/or field notes. Transcripts of recorded interviews were written verbatim. For non-recorded interviews (N = 4), transcripts included both paraphrases of interview discussions and occasional direct quotations from participants. Nonverbal cues and other observations were added throughout the transcripts.

Following completion of each transcript, interviews were segmented into individual data units (the smallest segments that could stand alone meaningfully), separated, and categorized by themes using a "constant comparison method" (Lincoln & Guba, 1985, p. 341). Each unit was compared to previous ones in order to group data into similar categories. Large categories were then subdivided into smaller, more

precise classifications. For example, original categorization involved grouping units into themes such as demographic characteristics, main triggers for secondary abstinence, hindering factors, supportive factors, etc. Then, each category was broken down further. For example, supportive factors were divided into sub-groups such as close friends, partners, etc. This continued until the data had been "fleshed out" to explain participants' experiences with secondary abstinence.

Results

Sample Characteristics

A total of 696 students received information about the study. Of those, 64 (9.2%) stated that they were eligible and willing to be contacted for participation (providing a proxy measure for rates of secondary abstinence in this sample). Several students either changed their minds about participating or were unable to work interviews into their schedules, resulting in a final sample of 20 students – 13 females and 7 males. This sample size was sufficient for reaching theoretical saturation.

Demographically, all participants were undergraduate students between the ages of 18 and 24, and most were originally from Texas. None had ever been married, and all identified their sexual activity as heterosexual, although no specific questions about sexual orientation were asked. Of the 20 respondents, 19 had participated in penile-vaginal intercourse. In spite of never having had vaginal sex, one female participant scheduled an interview because she labeled herself "sexually active" since she had engaged in oral sex. (When the study was explained to potential participants, a definition for "sexually active" was not provided.)

All participants in this study had made commitments to secondary abstinence (abstinence following the initiation of sexual activity). For some students, this commitment applied only to abstaining from vaginal sex. Others, however, were also committed to abstaining from oral sex and other sexual behaviors such as "petting." One student explained that, to her, abstinence meant avoiding anything other than open-mouth kissing.

Reasons for Secondary Abstinence

Triggers

One of the primary goals of this study was to determine what motivated students to commit to secondary abstinence. Respondents offered multiple reasons (summarized in Table 3.1) – each of which will be explored in detail below. However, it may be most useful to start by focusing on the factors that participants identified as the "main reasons" or "triggers" for their decisions.

Of the 19 participants who had engaged in penile-vaginal intercourse, 15 identified a single specific factor as the "main reason" or "primary trigger" for committing to secondary abstinence. These were determined from responses to questions about specific motivating factors that led to initial decisions to recommit to abstinence. These included religious beliefs (the most frequently cited "trigger"), fear of physical consequences, past negative experiences with sexual activity, wanting to "save" sex for the right person, and desire to honor a partner's wish to abstain.

The most surprising "main reasons" were from two female participants. One was motivated primarily by her desire to balance (or gain) power in her relationships. "I

Table 3.1. Summary of Factors Related to Secondary Abstinence That Were Identified by Interview Participants

Category of finding	Number of participants citing each factor
Main Triggers for Secondary Abstinence	
Religious beliefs	7
Past negative experiences	2
Desire to "save" sex for the right person	2
Desire to honor a partner's wish to abstain	1
Fear of physical consequences	1
Power	1
Health class questionnaire	1
Reasons for Secondary Abstinence	
Religion/faith	14
Due to relationship with God/Christ	6
New commitment or increased participation in activities	3
Partner's beliefs	2
Negative past experiences	10
More difficult break-ups	6
Complicated relationship	3
Feelings of worthlessness	2
Factors Supportive of Secondary Abstinence	
Avoidance of physical consequences	9
Feeling about self	9
Religious factors	6
Support from partner	6
Lack of current temptation	6
Friends	5
Parents/family	4
Success in school	2
Factors that Hinder Secondary Abstinence	
Attraction & opportunity	10
Alcohol	9
Perceptions of sex being accepted	9
Friends	7
Use of Environmental Manipulation	6

really want to be able to maintain power. And if I have to deny him sex in order to do that, then that's just what I'll have to do" (female participant). Another cited a questionnaire in her personal health class as a catalyst for her renewed commitment to abstinence. Having responded (in that questionnaire) that she had great respect for women who waited until marriage to have sex, she reevaluated her own decision to become sexually active. She decided that if this was something she valued so much, she would recommit to practicing abstinence.

Religion/Faith

The most common reason for secondary abstinence was related to participants' faith or religious beliefs: 6 of 15 participants provided this as their *primary* motivation (or the trigger) for the commitment, and 13 of 19 secondary abstainers identified religion as having an *influential* role in their commitment (important, but not the single trigger). Of those who did not cite religion as a personal influence (N = 6), 2 believed it might very well influence others' decisions to become abstinent. All the participants who cited their own religious beliefs as influential in their commitment to secondary abstinence identified themselves as Christian.

Several participants arrived at their decision to practice abstinence after making religious commitments or becoming more involved in church or religious activities. The resulting dissonance between their beliefs that premarital intercourse was "sinful" and their sexual behavior led to decisions to honor religious commitments by abstaining from sexual intercourse.

> How can I go to church and, you know, just be all passionate for the Lord, and then go the next day and just have sex with the girl I'm with or something? I

> mean, it just didn't make sense…. It was something that made me feel incredibly hypocritical (male participant).

Several participants attributed the influence of religion/faith on commitments to a personal relationship with God and/or Jesus Christ. They referred to being led by God to make the decision to practice abstinence. One participant explained that while she had not always felt so strongly that being sexually active was wrong,

> He [God] really spoke to me through one of my friends that I grew up with in church who is now a youth minister. He came to our church to preach, and it just really hit me that I need to get my life back on track. And so I've changed from all my partying ways and all that kind of stuff, and I'm back living the life that He approves of (female participant).

Other participants focused on the idea that practicing abstinence was necessary for either maintaining or strengthening their relationships with God. In some cases, however, the decision to practice abstinence followed a period in which an individual felt his or her relationship with God was deteriorating, and the decision, therefore, served to "fix" the problem of a weakening relationship caused by perceived disobedience.

Other respondents were less motivated by their own religious beliefs and more influenced by the beliefs of their partners. For example, one respondent, who identified himself as Hindu, claimed that his own religious beliefs were not a big factor in the decision to practice abstinence. Rather, it was his partner's Christian beliefs that led her to initiate a discussion about postponing their sexual relationship.

The same was true for another participant as well. Although sexually active in the past, he began practicing abstinence when he started dating a girl whose religious influences interfered with his desire to have sex:

> We had big fights always after she would go to church because for some reason, they always want to talk to college kids about not having sex… And so, she would always listen to these talks and think, God, you know, this is what is making me feel so bad all the time. This is what is holding me back from my walk with Christ. This is what is, this is what is, uh, you know, standing in my way from feeling good about me, from feeling about me and [my boyfriend], from feeling good about everything, you know…. The deal was, that her ideals and morals were set in something that was so uncompromisable that she *couldn't* change (male participant).

Given that religious beliefs – either one's own or those of a partner – were so influential within this sample, the next logical questions were: what were these beliefs and how (through what mechanisms) did they impact behavior? While most "religious" participants were quick to claim "faith" as their motivation for behavior, they were, nevertheless, visibly reluctant and unable to explain "how" their faith functioned as a motivator.

With a shared Christian perspective, most participants voiced similar beliefs in regard to their religion's view of sexual behavior. The majority stated that premarital sex was wrong – sinful. When asked to provide additional support for that belief, however, most struggled to do more than repeat very basic messages they had been taught.

> Basically, sex outside of marriage is not condoned by God, and it's seen as a sinful activity (male participant).

> I feel that premarital sex is wrong – that it's a sin and that I shouldn't be doing it (female participant).

The lack of depth regarding the foundation of their beliefs is further illustrated by one student's explanation of the rather passive role his faith played in the decision to practice abstinence:

> I guess it's just part of your morals and your values. Um, I grew up going to the Baptist church, and I think that just about everybody knows that the Christian faith preaches sexual abstinence. And I agree with it totally (male participant).

When probed to further explain how faith influenced his decision, he responded: "Yeah, um, and you know, I, I feel that I have a fairly strong faith. So that definitely plays a role" (male participant).

While most students shared similar beliefs about the "sinfulness" of premarital sex, their perspectives of exactly which aspects of premarital sex were "right" and "wrong" varied. For example, one participant identifying himself as a "solid Christian" shared the following:

> As a Christian, I consider it [sex] immoral when done on a recreational basis – you know, just going out and trying to get with some random girl just for sex, not necessarily in a real relationship. I consider it okay if there are any kinds of true feelings involved. And it's not that it's necessarily *evil* in all the other cases, but it can certainly be a temptation (male participant).

Even though that young man was in the minority with his belief that premarital sex was acceptable in certain situations, his statement represented an attitude of "being morally right" that came from most participants. Despite some variations in beliefs (for example, some felt it was necessary to abstain from only vaginal sex while others felt they should abstain from anything beyond kissing), the majority of self-identified religious students expressed great confidence in their beliefs – even if they could not articulate them cogently or support them effectively.

To the extent that students struggled to define their religious beliefs regarding sexual activity, they struggled even more to explain exactly how those religious beliefs

or relationships with God played a role in their decisions to abstain. When asked why she was committing to abstinence because of God, one female replied:

> …that's a hard question. Because I feel like in so many aspects of my life, I've, like, changed so much for the better once I, like, found a relationship with Him [God]. And this is always the hardest thing I've struggled with. Like, I knew it [sex] was wrong, and I still did it. And I felt like my relationship with Him could grow more if I could just, like, put my trust in Him and do what He says by not having sex (female participant).

As study participants attempted explanations for mechanisms by which religious beliefs or their faith played a role, one of the only concepts presented with any semblance of logical articulation was that of guilt.

> …just an immense feeling of guilt that I had…. It was such a bad guilt, and I mean, that was really the only way I know to describe it – is just a feeling of conviction and guilt that unless I change this, you know, I'm not going to get any closer in my walk with God (male participant).

Furthermore, many respondents' statements suggested that guilt feelings associated with sexual activity were stronger and more disturbing than for other "inappropriate" behaviors (lying, excessive drinking, etc.):

> There's other areas of my life that I had felt very guilty and very convicted for, but that's definitely the most guilty (male participant).

But if sexual activity resulted in guilt (sometimes "immense" guilt) among self-identified "religious" students, did secondary abstinence relieve that guilt? Participants indicated it did. And they believed it relieved guilt quickly – in some cases, a "ton of relief" came, in as little as a few weeks (male participant):

> For a while, I felt guilty about it [having sex] because I was getting closer to God. And I think he was telling me, 'you shouldn't be doing this.' So whenever it was happening, I was feeling guilty about it. And so when you stop, all of a sudden, that guilt is gone, and you feel a lot better (female participant).

In contrast to the experiences of many participants, some claimed their feelings of guilt were not as pervasive and were situation- or relationship-specific. One said there was no guilt about having had sex in his first relationship because he felt he had been deeply involved with and committed to that partner. In a relationship after that, there was guilt (but according to him, not "regret"), due to not being ready for that much physical intimacy in that particular relationship.

Overall, religious beliefs were among the primary factors study participants (regardless of gender) associated with their decisions to commit to secondary abstinence. Respondents were quick to point out the "wrongness" of premarital sex, but found it more difficult to provide thoughtful foundations for those beliefs. Furthermore, they found it challenging to describe exactly how religious beliefs impacted decisions, but their comments centered on the concept of "guilt" on several occasions. The influence of religion also resurfaced in the discussion of factors that support or sustain their decision (see upcoming section).

Negative Past Experiences

> In every one of my relationships, you can point to one single thing that either killed it or made it horribly worse… worse than it had to be. And that is sex, or any degree thereof…. (male participant).

Half of this study's sample of secondary abstainers (N=10) reported having negative experiences with sexually active relationships that fell into several categories. Some expressed the idea that sexual activity was harmful to the relationship; others reported having negative emotional reactions following sexual activity. For many, that negative impact included making a break up much more difficult.

Participants identified a variety of ways in which sex negatively influenced their relationships. One of the most common was that sex "complicated" relationships, and in most cases, students felt that sex had a negative impact. One student simply stated, "It [sex] completely, you know, decimated the relationship" (male participant). In his experience, sexual activity left him feeling empty and completely unfulfilled. In elaborating on that idea, he said: "it [sex] was the fixation of our relationship…. it had been a byproduct of the feelings we felt between each other, but at this point, she was getting her emotional fulfillment through that [sex]" (male participant).

Another student shared a similar outlook:

> …it's like before we relied on our emotional aspect to carry us through, but then now that we were physical…. we weren't attached emotionally as much (male participant).

One male participant shared that he had noticed a pattern in his relationships in which either he or his partner had been hurt more deeply when sexual activity was involved, due to the effect that activity had on changing the nature of the relationship:

> Well, I've noticed that it [being sexually active] kind of makes things close quicker than the way you want it…. It can actually take it to another level before both of ya'll are ready in a relationship. And also, it could give either partner a false sense of, uh, love (male participant).

Other students expressed undesirable emotional reactions following their experiences with sex, including feeling worthless or frustrated for letting themselves down.

> I knew it was something I didn't want to do, and that I wasn't respecting myself in that, um, in what I really wanted to do (female participant).

> It felt like I was just being used. Like whenever, like I would wake up the next morning, and you know, he wouldn't call or didn't even, like, acknowledge me anymore…. I just wasted my time and myself (female participant).

Another commonly mentioned negative experience was related to breaking up. Participants frequently expressed the idea that having been sexually active made it considerably more difficult to end relationships.

> …it's hard to break away from somebody once you've been so involved with them physically. 'Cause it's like now – it's like another form of attachment… since you shared so much with them, it's kind of hard to pull away from that kind of situation (male participant).

Tougher breakups, feelings of worthlessness and frustration, and complications in the relationship were commonly expressed negative experiences of participants. Although all participants who said they felt worthless after engaging in premarital sex were female, there were no apparent gender differences in perceptions of sexual activity leading to harder breakups and overall relationship complications. The desire to avoid such negative experiences in the future appeared an important factor for many in deciding to practice secondary abstinence.

Supportive Factors

In addition to providing reasons for the *transition* to secondary abstinence, participants were asked to describe factors that *supported or sustained* their practice of abstinence. Among religious participants, Bible study, God, and fellow Christians were important sources of support. Among the sample as a whole, students claimed close personal friends, parents/family, desire to avoid physical consequences, feelings about self, success in school, and protection of or respect for one's partner as important factors.

Religious Factors

While religious beliefs were the impetus for the transition to abstinence for some students, many talked about the ways in which their religious beliefs supported their practice of abstinence. Participants reported prayer, communication with God, the Bible, and other Christians supported their decisions.

> Reading the Bible, studying the Bible [helps me abstain]. Um, seeing that it really, it really is in there – that you're really not supposed to be doing that and there are really no excuses for it (female participant).

Friends

The value of support from friends was mentioned by a number of participants – not just those who considered themselves religious. Though support for abstinence was commonly reported to have come from a close friend or small group of close friends, the type of support varied among participants.

In some cases, friends triggered the participants' consideration of secondary abstinence. For example, one female explained:

> My roommate is amazing…. She has inspired me so much to change my life and turn things around and do things the way I should be doing them…. I saw that…she has more fun than most of the people that I know that drink or have sex or whatever (female participant).

In addition, some said one of the main sources of support was having friends who shared a similar sexual history and desire for abstinence. Participants explained that sharing stories with friends who had gone through similar transitions to abstinence served to remind them that even though it may be hard, others have been in the same situation and have been successful at practicing abstinence. Some also found inspiration in friends who practice primary abstinence.

In other situations, friends were helpful simply by not supporting sexual behavior and, in some cases, actively discouraging it. For example, one male explained that he was supported by a friend who, in social settings, would not pressure him to be sexually active with the girls he met. A female shared this example:

> She [my friend] really motivates and supports me….We've got that *He's Just Not That Into You* book – it's kind of our Bible now…. I can explain a situation with a guy to her, and she can just look at me and say, 'He's just not that into you.' And when we're looking at our own experiences, it's sometimes hard to see that, but we can hear each other's stories and see immediately (female participant).

Parents/Family

Another source of support was family – in particular, parents. Several participants mentioned feeling supported by knowing their parents would approve of abstinence, and one specifically commented on how he felt much more support and trust from his parents once they learned of his commitment to abstinence.

Families' primary supportive role appears, however, to be associated less with overt support than with a persistent fear many respondents had of disappointing their parents:

> If I didn't have another reason to stay away from it [sex], my fear of them [parents] knowing and them not liking that at all would be a reason for me to not do it (female participant).

Avoidance of Physical Consequences

In addition to fear of disappointing parents, participants pointed to other "fear-based" factors that helped support their practice of abstinence. One such factor – the fear of contracting a STI – was mentioned by several participants. These participants, in particular, seemed to perceive that STIs are frighteningly prevalent.

> I started thinking, if I stay this way [sexually active], I'm bound to, I mean, it's [getting an STI is] bound to happen (male participant).

Although most participants had never had an STI, a couple had friends who had, and two participants had personally contracted an infection through sexual contact. For these two, the role of STIs in the decision to practice abstinence was quite different. For one, her experience with a bacterial STI served as a wake-up call to the negative consequences that could result from sexual activity, even when with a partner she trusted.

In contrast, the other student's decision to practice abstinence came, in part, due to the belief that no one would want to be sexually active with her following her infection with HPV. She didn't think she would ever find a guy "who'll want to deal with it," so she stated that she did not expect to be sexually active ever again (female participant). This was not, however, the only factor playing a role in her decision to be abstinent. This student was the only one of the 20 who reported having been a victim of rape, and although subsequently she had been sexually active in a relationship (voluntarily), the rape continued to affect her attitude toward sexual behavior in general.

Another fear-related component was tied to pregnancy risk, which, like fear of STIs, is a fear common to youth engaging in premarital sexual activity (Keller, Duerst, & Zimmerman, 1996). Several participants expressed concern about getting pregnant (or getting a partner pregnant), and found this fear to support their decisions to practice abstinence. This was observed equally in both "religious" and "nonreligious" students. Many were particularly concerned about becoming pregnant at this point in their lives

and having to make difficult decisions, which could alter their ability to reach personal goals.

A couple of young women were even more motivated to avoid pregnancy as a result of pregnancy scares in the past.

> I thought I was pregnant at one point… It was the most awful day of my entire life…. I'm 18 years old, and if I have a baby, I'm not going to get to go to college…. Anytime I think about sex, I think about, like, getting pregnant – and that's terrifying (female participant).

Feelings About Self

Another major support for secondary abstinence seemed related to students' attitudes about themselves. Many students expressed a sense of self-satisfaction for being able to make this commitment to abstinence. They reported being "happier," feeling "good" about themselves, feeling more mature, and frequently, being "proud" of both their decision and their ability to maintain their abstinent behavior.

> I'm really proud of myself for doing that – 'cause I think it's a big thing, like, to have sex and then completely stop and know that you don't want to do it again until you're married (female participant).

So while respect for self played a role, it appeared that respect from others was a motivating factor as well. One participant explained it this way:

> Everybody says stuff like, 'You need to test drive the car before you buy it,' and all that, um, but their ultimate reaction is 'Wow, that's really cool' (male participant).

Success in School

A couple of participants cited success in school as a motivating factor for abstinence. Concerns were related primarily to the amount of time and energy it took to be involved in serious relationships – time taken from other priorities such as academics.

> I don't want any distractions. 'Cause when I'm dating a girl, I'm always thinking about her – things I can do for her. And that's when my grades suffered in the past (male participant).

Support from Partner

Support from one's partner was another common factor that facilitated maintaining the commitment to abstinent behavior. Six participants stressed the importance of this element. One female said her boyfriend immediately supported her decision when she approached him about postponing intercourse. She stated that he "made it clear…that he didn't want to be having sex with someone who didn't want to be having sex with him" (female participant). For this participant, the support of her partner enabled them to maintain a good relationship while transitioning to abstinence.

A partner's support was also important in relationships in which the couple had not yet been sexually involved with each other, despite individual past experiences. In such cases, support was perceived as vital for the couple to abstain in tempting situations. Participants referred to the fact that it would be hard to be solely responsible for ensuring the practice of abstinence. "If he wasn't willing not to [have sex], I know that I couldn't either, you know. I think it takes both people to say no" (female participant).

Participants stressed this frequently, and a couple even went as far as to say abstinence would only work when both partners were completely committed to it.

> There's going to be times when each of you want to. But if you're both 100% dedicated, you know, you can actually say, like, 'Yes, I want to have sex with you so bad,' but it's like that person just knows and trusts, and you just have a mutual agreement that no matter what the circumstance, it's not going to happen. And that makes it, that it is your fool-proof guide right there – if each person could be 100% dedicated to it (male participant).

Furthermore, a number of participants said they strengthened their ability to remain committed to abstinence by using environmental manipulation. One way in which they did this was by dating only partners who shared their commitment to abstinence. They viewed this decision as one that greatly enhanced their ability to remain abstinent.

Lack of Current Temptation

Another factor supporting participants' abstinent behavior was lack of current temptation. Six of the 20 participants reported not being in serious relationships – or having been in any since their commitment to secondary abstinence. Many participants realized that a commitment to abstinence could seem less genuine, or at least less realistic, when it had not been "tested" within the context of an intimate relationship. (It should be noted that at least 3 of the participants had been in relationships following their commitment, and they remained determined to practice abstinence.)

Hindering Factors

Friends

Although friends sometimes were described as supportive of abstinence, paradoxically, seven participants identified friends as potential barriers making it harder to practice abstinence. For some, the pressure came indirectly from simply knowing that their friends were sexually active. For others, friends made abstinence harder in a more direct way.

> They didn't pressure me or anything to *have* sex, but a lot of my friends *do* have sex. And they were kind of like, 'well, you've already like done it. You know,

> what's the big deal?'…. it was definitely like, lack of support there (female participant).
>
> They think I'm crazy – er, my friends do…. They don't think I'm going to be able to keep it….. [they say] 'Well, what if you don't get married for 10 more years? Can you go without sex for 10 more years?' (female participant).

Alcohol

Nearly half (N=9) of the participants mentioned alcohol as a factor that hindered abstinence.

> I'd be less likely to be abstinent if alcohol was involved (male participant).
>
> Normally, I would not sleep with a guy if I was sober. Like, usually, whenever I'm drinking, I'm like, I'm dancing, having fun. I'm being crazy. I'm way more bold that I would be if I was sober (female participant).

In order to help deal with this challenge, some participants reported having cut back on their drinking or limiting alcohol consumption in certain situations. One explained when she and her boyfriend drank together, they worked to avoid situations (such as being alone together) in which alcohol might make them more likely to "mess up." In such cases, students often reported using environmental manipulation – in this example, avoiding or limiting alcohol use – to reduce the impact of hindering factors.

Perceptions of Sex Being Accepted

Another factor that participants (N=9) identified as hindering abstinence was the perception that sex is widely accepted.

> That's [sex is] what everybody in college seems to be doing. That's the 'in' thing – going out and partying and sleeping with people – hooking up, or whatever you want to call it (female participant).
>
> You know, movies and television – things like 'Sex and the City' and 'Friends' – all portray sex to be this great thing. And they project the idea that life without sex is a horrible life (male participant).

> I mean, everybody's having sex these days it seems like…. Everybody talks about it. Everybody say's it's great. It's pretty hard to find somebody that says they just really don't like sex (male participant).

Attraction and Opportunity

In addition to friends, alcohol, and the perception of sex being widely accepted, some participants felt that being involved in a serious and loving relationship either did or would make it tough to abstain – especially since they had been sexually active before. Several said one of the biggest challenges was simply dealing with intense physical attraction.

The challenge of physical attraction seemed to be compounded by the new-found freedom that college students experience when living alone (or away from parents) for the first time. In fact, one student specifically mentioned that she and her boyfriend avoid staying overnight together for that reason, another example of environmental manipulation.

Discussion

While this study provides rich descriptions of young adults' experiences with secondary abstinence (a topic that only recently has begun to interest behavioral scientists), it is important to acknowledge that the data presented are not generalizable beyond this sample. The experiences reflected in this paper are those of a select group of college students. By design, this type of qualitative, naturalistic inquiry is very much context-bound, and is meant to provide a detailed glimpse into the experiences of a few, rather than allowing for broad generalizations about all college students.

A sample size of 20 is not representative of all college students, and college students in Texas (a state in which it is challenging to find any graduating high school student not familiar with abstinence education) may differ from students in other areas. Furthermore, all participants were willing to talk about their sexual experiences. It is likely that some secondary abstainers (especially those feeling guilt or shame) would be hesitant to discuss past sexual experiences; for this reason, data may be biased toward those more comfortable with the topic and/or toward those who wish to be vocal about their commitment, in efforts to further spread the message supporting secondary abstinence. Despite such limitation, however, the data from this sample provide important clues for understanding a phenomenon widely unexplored in the scientific literature.

In this sample, not surprisingly, religious factors consistently were identified as important motivators for transitioning to secondary abstinence. What was unexpected, however, was the extent to which students struggled to articulate the reasons and foundations for their beliefs. They exhibited great confidence in *what* they believed, yet often failed to logically articulate their beliefs and/or to produce much evidence to support why they believed as they did.

Not only did participants struggle to explain why they believed what they did, they struggled even more to clearly articulate how religion actually impacted behaviors. They mentioned communication with God or reading the Bible, but they found it difficult to explain *how* such activities impacted their decisions about sexually abstinent behavior.

Is this problematic? Is it important to health educators that students are unable to fully explain why they behave in certain ways as long as that behavior is putting them at reduced risk for unhealthy consequences? After all, many "religious" individuals might equally struggle to articulate "how" they communicate with a higher power or exactly how divine guidance impacts their daily decisions. The difficulty of explaining such a personal experience may not impact its effectiveness as a form of behavioral control.

In light of participants' inability to explain (and perhaps, understand) this control mechanism, it is helpful to turn to behavioral theories for a clearer understanding of mechanisms underlying motivation for secondary abstinence. Social Control Theory (SCT) (Hirschi, 1969), for instance, offers potential explanations and has been linked to adolescent sexual behavior by several scholars (Crockett, Bingham, Chopak, & Vicary, 1996). Control theories, in general, take a unique perspective in examining delinquent behavior. Rather than setting out to explain why a person engaged in a certain behavior, the theories' explanations are based on why a person *did not* behave in certain ways (Shoemaker, 2000). While sexual activity among college students is not typically labeled "delinquent," secondary abstinence is a behavior for which it is important to explain why a person is *not* being sexually active rather than why he/she *is*. Because of the focus on the *absence* of the behavior, delinquency theories offer a unique perspective.

SCT is an expansion of delinquency theories developed by Travis Hirschi, and is based on the assumption that "social bonds and attachments are a stronger protection against delinquency than are personality characteristics" (such as poor self-concept)

(Shoemaker, 2000). SCT explains the impact of religion acting as a control for sexual activity through four components of the social bond: attachment, commitment, involvement, and belief. Attachment encompasses the connectedness (both emotional and psychological) of an individual to others in a social group and the degree to which he/she values others' feelings and opinions. Commitment involves a cost-benefit analysis of conforming to the social institution's conventional beliefs, comparing what is gained by conformity to what could be lost by nonconformity. Involvement is "participation in conventional and legitimate activity," and "belief involves the acceptance of a conventional value system" (Shoemaker, 2000, p. 168).

These constructs provide clues regarding the mechanisms through which religion might influence behavior, and each of these theoretical constructs emerged in the qualitative data. Participants expressed concern for the opinions of other important members of their faith communities, and they appeared to have contemplated the damage that could result if others discovered their sexual activity. In fact, one participant specifically referred to the fact that she would not want her Sunday School students to find out she was sexually active, and that was one of her motivations for remaining abstinent. Several participants spoke of involvement with faith-based groups through attendance at worship services, fellowship events, Bible studies, and other activities. Furthermore, the majority of students exhibited adherence to a "conventional" set of Christian beliefs. According to SCT, weakening of such "conventional beliefs" would make delinquent behavior more probable (Shoemaker, 2000), thus strengthening

those beliefs (perhaps through participation in faith-based groups) would theoretically make the "negative" behavior less likely.

Also of interest is the suggestion made by some researchers that the institution of religion "may be one of the most effective" institutions for controlling delinquency in situations in which secular controls for behavior have been weakened (Shoemaker, 2000, p. 171). This hypothesis is based on the idea that there are often multiple influences that discourage "inappropriate" behaviors. When multiple societal influences condemn behaviors (such as violent crimes or illicit drug use), the impact of religious factors may not be distinct from other influences. In contrast, however, for behaviors (such as adolescent sexual activity) that are not consistently discouraged by most other societal influences, religious participation and beliefs may exert greater control over the behaviors (Burkett & White, 1974).

This appears particularly important in regard to college students' sexual behavior, considering that many participants expressed feeling that society as a whole did not condemn sexual activity. In fact, several respondents specifically noted that sexual relationships were somewhat expected in a college environment. In addition, participants expressed that the prevalence of messages about sex – on TV, in movies, and in print media – further supported society's view that being sexually active is the norm. Given the participants' perceptions of few secular controls for sexual behavior, it might be that the institution of religion does, in fact, exert greater influence on those closely connected to it.

When participants were asked to explain the role of religion in motivating secondary abstinence, however, the only potential mechanism mentioned was guilt. Other research suggests that "premarital sex per se does not result in… feelings of sex guilt," but it may be that feelings of guilt are more likely found among students with greater religious ties (Else-Quest, Hyde, & DeLamater, 2005, p. 108). Another study found college women with the highest levels of religiosity reported the most guilt about sexual intercourse (Davidson, Moore, & Ullstrup, 2004). Interestingly, researchers examining other behaviors (such as cigarette smoking, other tobacco use, and exercise behavior) have found that college students who anticipated feeling guilt or anxiety as a result of choosing health-risk behaviors, in fact, exhibited lower levels of unhealthy behaviors (Birkimer, Johnston, & Berry, 1993). For such students, feeling guilty is, in essence, a behavioral belief about a possible outcome of sexual activity. Assuming this is evaluated as negative, the Theory of Planned Behavior would suggest that the resulting attitude toward the behavior might reduce intention to engage in sexual activity (Ajzen, 1991).

To health professionals, however, this may be disturbing. While the behavior being generated is protective, is it healthy to be motivated by guilt? What potentially negative impacts might such guilty feelings have on other areas of health – especially emotional health? If one were focusing strictly on the ends (abstinent behavior) regardless of the means or methods (in this case, guilt) used to achieve them, this phenomenon might go relatively unnoticed, but Buchanan (2000) has suggested that it is inappropriate, even unethical, to overlook the means used to achieve desirable "healthy"

behaviors (Buchanan, 2000). Not only are ends and means related, but also, Buchanan argues, "the product [overall well-being] is defined, at least in part, through the process by which it is achieved [in this case, guilt]" (Buchanan, 2000, p. 21). From such a perspective, the motivation provided by guilt would be an important concern for health educators, even if it were leading to a "desirable," protective behavior.

In addition to religion, one of the other most commonly cited reasons for secondary abstinence was having had previous negative experiences with sex. If this is true, would the same respondents have transitioned to abstinence if their experiences had been positive? Or instead, are there other characteristics of secondary abstainers that predispose them to have more negative perceptions of sexual experiences? Do their beliefs shape their sexual experiences in order to make them more negative in retrospect?

Once study participants made the transition to secondary abstinence, there were several factors that they viewed as supportive. Interestingly, *friends* could function as either a supportive factor or a barrier to maintaining a commitment to abstinence. Some participants felt supported by one or two close friends who shared similar values regarding abstinence, and in many cases also practiced either primary or secondary abstinence. Others, however, shared that that their larger circle of friends (extending beyond the closest one or two) were sometimes less supportive of their decisions to abstain, serving as a hindering element.

This phenomenon is reflected in the construct of *Subjective Norm* in the Theory of Planned Behavior; the theory posits that participants' friends' beliefs about abstinence

– in particular, the importance of the participants' abstinent behavior – could be a factor that influenced their intention to practice abstinence (Ajzen, 1991). Furthermore, this theory may help explain the varying roles of friends, as respondents would be most likely to comply with the referents most important to them (i.e. close friends rather than general acquaintances).

Another factor that supported the decision for abstinence was fear of physical consequences such as STIs or pregnancy, but the majority of respondents said that such a fear was not enough to actually keep them from being sexually active. Only a few had experienced pregnancy scares or had contracted STIs. Therefore, as one participant explained, after having been sexually active without "anything bad happening," there is a reduced likelihood of being motivated to abstain out of fear.

A strategy useful for maintaining abstinence – appearing in several respondents' discussions of hindering influences – was participants' use of environmental manipulation to create situations or circumstances more conducive to abstinence. Social Cognitive Theory stresses the role environment plays in behavior, and through the concept of reciprocal determinism, even provides an explanation for both a person and the environment shaping each other (Glanz, Rimer, & Lewis, 2002). However, in the case of secondary abstainers, it seems that the environment does not just "happen" to be shaped by the person. While environmental manipulation can be explained partially through other constructs – *environment* in Social Cognitive Theory (Bandura, 1986), aspects of *perceived behavioral control* in Theory of Planned Behavior (Ajzen, 1991), or *seeking and enacting strategies* in the AIDS Risk Reduction Model (Catania, Kegeles, &

Coates, 1990) – it might be understood most fully and accurately by looking closely at the deliberate attempts made by individuals to set up environments for success.

In order to facilitate successful behavioral performance, secondary abstainers in this sample often made conscious, deliberate decisions to structure their environments to support abstinence. One of the manipulations mentioned was limiting time alone with a partner. Previous researchers examining sexual possibility situations found, among other things, that "time alone with a member of the opposite sex" significantly predicted intimate sexual behavior (DiIorio et al., 2004). This is one of the factors that participants most often mentioned attempting to control. Another form of environmental manipulation was reduction of alcohol consumption, an additional factor found to be associated with sexual activity in previous research (Feldman et al., 1997; Santelli et al., 2004).

It is also interesting to note that, of all the factors motivating abstinent behavior, very few were health-related. While some students did mention fear of unintended pregnancy or STIs, such comments were more frequently made in the context of having their sexual history "discovered" than in the context of health maintenance. In fact, a few participants even explained that STIs and unintended pregnancy were not their primary motivations, because they had been sexually active in the past, and didn't suffer from such consequences. This is especially interesting in light of the number of abstinence education curricula that focus concertedly on presenting health-related negative consequences of sexual behavior (Wilson, Goodson, Pruitt, Buhi, & Davis-

Gunnels, 2005). According to this study's participants, such health-related factors do not represent the strongest motivators for a commitment to secondary abstinence.

Implications for Practice

This research has several important implications for health education practice. First, secondary abstinence *is* practiced by young adults, for various reasons. Our data indicated that there are college students who choose to commit to abstinence even after having initiated sexual activity. Consequently, attempts to classify students by sexual activity status should include options for a current commitment to abstinence, not simply lifetime abstinence. Second, health educators may have little control over the primary motivations (such as religion and previous negative experiences) for secondary abstinence. It may be possible, however, to impact secondary abstinence in other ways. For instance, health professionals might reduce the impact of hindering factors such as the perceived norm that sex is widely acceptable. In addition, health educators can enhance the impact of supportive factors by stressing the importance of choosing partners with similar commitments to abstinence or encouraging environmental manipulation to create more supportive settings for abstinence. Although there is still much to be learned about the phenomenon of secondary abstinence, this study's findings offer a starting point for researchers and practitioners alike.

CHAPTER IV

PREDICTORS OF SECONDARY SEXUAL ABSTINENCE AMONG A SAMPLE OF COLLEGE UNDERGRADUATES

Overview

In the last few years, researchers have focused increased attention on sexual abstinence among adolescents, likely due to increased federal funding for abstinence-only-until-marriage programs (Bassett et al., 2002; Marx & Hopper, 2005; Rosenberg, 2002; Stewart et al., 2003; Thomas, 2000; Wiley & Terlosky, 2000). In theory, abstinence-only education appears a logical choice for reducing adolescents' health risks. By practicing sexual abstinence, students likely would reduce the number of lifetime partners, the number of non-monogamous partners, and their overall exposure to sexual activities that put them at risk for pregnancy and sexually transmitted infections (STIs).

Even if the practice of abstinence might potentially lead to reductions in risky sexual behaviors (such as multiple partners and unplanned pregnancies), the question remains regarding what effect abstinence-only programs actually have. To date, empirical research does not support the effectiveness of abstinence-only programs (the type currently supported by federal funding) (Kirby, 2001; Marx & Hopper, 2005). Furthermore, there are mixed results from studies that have focused on the effectiveness of adolescents' virginity pledges, an element often incorporated into many abstinence-only programs. Although researchers have found settings with few pledgers (Bearman

& Bruckner, 2001) or pledges made privately (Bersamin et al., 2005) were associated with delayed initiation of intercourse, other studies have reported virginity pledges were not associated with reduced incidence of STIs (Bruckner & Bearman, 2005).

While it is true that avoidance of sexual intercourse should reduce the occurrence of many negative consequences (even if not STIs, at least unwanted pregnancies), an interesting question remains. What happens when abstinence messages are presented to sexually experienced youth – those who have already initiated sexual activity? Is it even logical to promote abstinence-only for those students? Although youth are likely to continue having intercourse following initiation (Thomas, 2000), programs often operate under the assumption that sexually active students can transition to being sexually inactive (Hancock & Powell, 2001; Worth Waiting For, 2002). Such an assumption has rarely been questioned by practitioners and has yet to be thoroughly addressed by the scientific community. The practice of sexual abstinence following the initiation of intercourse (and often a period of sexual activity) is termed *secondary abstinence* (Loewenson et al., 2004; Thomas, 2000).

Rather than studying *secondary* abstinence, many of the available examinations of adolescent sexuality have focused on antecedents of initiation of sexual intercourse (Kirby, 1997, 2002; Zimmer-Gembeck et al., 2004), and in some cases, individuals' reasons for *primary* abstinence (never having had intercourse) (Bassett et al., 2002; Dunsmore, 2005; Lammers et al., 2000; Loewenson et al., 2004). A variety of factors have been cited as motivating primary abstinent behavior, including higher SES (Lammers et al., 2000; Oman et al., 2003), 1 or 2 parent households and higher parental

education levels (Carvajal et al., 1999; Lammers et al., 2000; Oman et al., 2003), fear of adverse consequences such as pregnancy or STIs (Blinn-Pike, 1999; Dunsmore, 2005; Loewenson et al., 2004), parental expectations and influences (Bassett et al., 2002; Lammers et al., 2000; Paradise et al., 2001), personal values (Blinn-Pike et al., 2004; Paradise et al., 2001), and religious factors (Bassett et al., 2002; Dunsmore, 2005; Lammers et al., 2000; Oman et al., 2003). A recent qualitative study also found "future orientation," beliefs about "positive outcomes of abstinence," fear of a "physical/sexual relationship," "concerns related to social responsibility," "fear of emotional/moral consequences," and the desire to gain control in or manipulate aspects of the relationship were cited by a sample of college students as important motivations for primary abstinence (Dunsmore, 2005, p. 19-21). In addition, researchers have found that women seem to feel greater social pressure for remaining virgins than men, and they tend to be more proud of their "virgin" status (Sprecher & Regan, 1996).

Despite such studies focusing on *primary* abstinence, a review of the literature revealed a sizeable gap in the research dedicated to examining and understanding the practice of *secondary* abstinence (see Chapter II). Although various authors have alluded to the term or the concept in their work (Erulkar et al., 2004; Haglund, 2003; Norris et al., 2003; Paradise et al., 2001; Simbayi et al., 2004; Thomas, 2000), only one study has been identified so far, examining secondary abstainers' reasons for avoiding intercourse (Loewenson et al., 2004). This study found those reasons were very similar to the ones cited by primary abstainers and included fear of negative consequences and "normative beliefs about the appropriateness of having intercourse" (Loewenson et al.,

2004, p. 213). The authors of that study did, however, point out that secondary abstainers' reasons for abstinence were limited to a selection of responses the researchers produced based on knowledge about *primary abstinence*. It is possible that different influences existed, but were not provided as response options (Loewenson et al., 2004).

In addition to identifying reasons for secondary abstinence, Loewenson et al. (2004) are some of the first to provide data regarding its prevalence among adolescents. The researchers found that among the "sexually experienced" youth in their study (a sample of Minnesota 9th and 12th grade students), approximately 7.8% (1,944 of 24,921 adolescents) claimed to practice secondary abstinence (Loewenson et al., 2004). To the best of our knowledge, this is one of the only estimates of secondary abstinence prevalence available in the scientific literature to date. The purpose of the current study, therefore, is to begin to fill this gap in research about secondary abstinence by providing a better understanding of the practice as well as an estimate for its prevalence in a sample of college students.

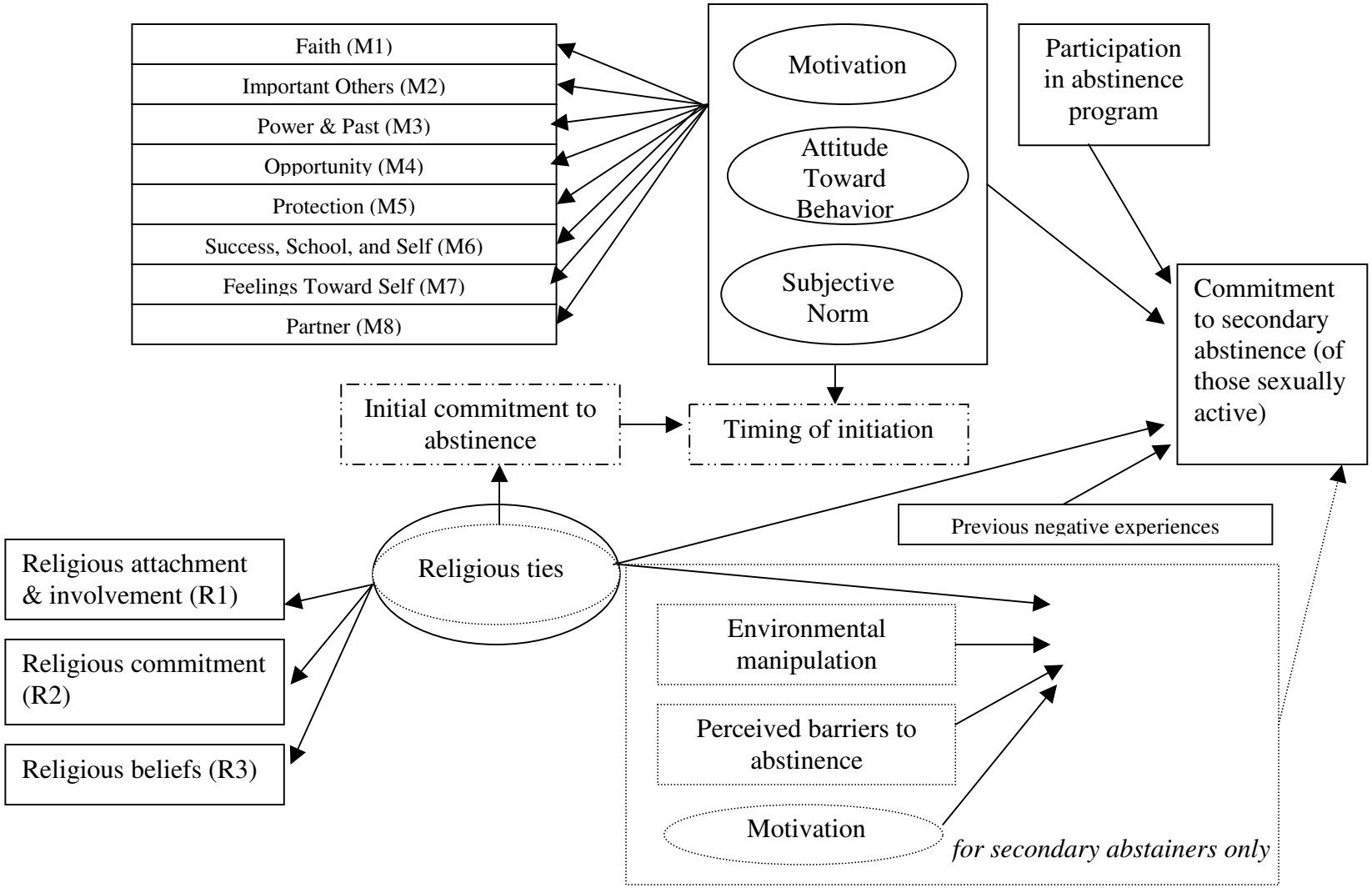
Theoretical Framework

This study was founded on previous qualitative research conducted to explore college students' experiences with secondary abstinence (see Chapter III). Following the analysis of those data, links were drawn to health behavior and behavior change theories that were useful in explaining the concepts articulated by the open-ended responses of the research participants. The variables included in the study reported here originated from the qualitative data in tandem with the resulting theoretical explanations;

these foundations guided the development of a model for the hypothesized relationships among variables. Initial drafts of the model began during qualitative analysis, and were refined throughout the analysis process and in light of health behavior and behavior change theories. The variables in this study and their hypothesized relationships are depicted graphically in the final model presented in Figure 4.1.

Among the variables in the model, Attitude Toward Behavior, Subjective Norm, Religious Ties, Previous Negative Experiences, Perceived Barriers, Environmental Manipulation, and Motivation for Abstinence were factors that were salient in the qualitative data. Furthermore, several of these factors were included due to their importance in various health behavior theories often deployed in understanding the sexual behavior of adolescents and young adults. Attitude Toward Behavior and Subjective Norm are included in the Theory of Planned Behavior (Ajzen, 1991), while Religious Ties and Perceived Barriers are constructs in the Social Control Theory (Hirschi, 1969) and Health Belief Model (Rosenstock, 1974), respectively. The Environmental Manipulation variable includes aspects of the Environment construct in Social Cognitive Theory (Bandura, 1986), Perceived Behavioral Control in Theory of Planned Behavior (Ajzen, 1991), and Seeking and Enacting Strategies in the AIDS Risk Reduction Model (Catania et al., 1990). In addition to being grounded deeply in the responses provided by the sample in the qualitative study, the construct of Motivation for Abstinence was included due to research evidence linking various dimensions of motivation to sexual abstinence in other samples of college students (Dunsmore, 2005).

Figure 4.1. Model of the Hypothesized Relationships Between Predictor Variables and Secondary Abstinence



Self-Efficacy to Remain Abstinent was included in the model based on its influence on behavior as explained in Bandura's Self-Efficacy Theory (Bandura, 1997). The Participation in Abstinence Education variable was added to capture any potential relationships among abstinence programming and adolescents' behavior. Demographic variables such as gender, age, and ethnicity were included based on previous research that has linked each of the factors to abstinence, and for group comparisons (Blinn-Pike et al., 2004; Donnelly et al., 1999; Kirby, 1997; Oman et al., 2003).

Purpose

As little empirical data on the topic of secondary abstinence and its multi-dimensional facets are currently available, this study represents an attempt to begin filling this void. Our purpose in this study, therefore, is twofold: (1) to determine the prevalence of the practice of secondary abstinence, and (2) to identify factors associated with its practice among a sample of college undergraduates in Texas.

Method

Data Collection

In the fall of 2005, complete listings of undergraduate students' (all classifications) names and e-mail addresses were obtained from 3 universities within a single large university system in Texas. The lists provided the sampling frame for a random sample of 6,000 students (stratified by university), representing a total population of 41,808. Students were e-mailed an invitation to participate and a web-link for the online survey. A second, follow-up e-mail was sent a week after the initial invitation was mailed. Data collection ended 2 weeks after the initial contact. As an

incentive for participation, students were given an opportunity to enter a drawing for 1 of 4 DVD players (carried out through a separate weblink in order to preserve anonymity of survey responses). Incentives were included as a tool to increase response rate (Dillman, 2000). Of the 6,000 invitations, 5,659 were deliverable, and 1,133 participants completed surveys (a response rate of 20.0%).

Instrument

The survey instrument was designed to measure the factors posited in the theoretical model (Figure 4.1). Instrument drafts were sent to a panel of five experts in the field of health education and/or sexual health/sexuality education to establish content validity of the items. The final version incorporated reviewers' comments and was constructed online; a pilot-test was subsequently conducted with a convenience sample of 143 students from the largest university in the sample.

The instrument contained 45 items (several with multiple components) designed by the author. The final version of the survey was placed on a website for electronic distribution and administration; electronic delivery facilitated fast, convenient, and anonymous survey response (Tse, 1998). Informed consent was required for students to move from the introduction web page to the survey, and estimated completion time was 10-15 minutes. The Institutional Review Board of the local university approved this study, proof of which was supplied to the other universities (all within the same university system).

Measures

A total of ten primary variables were examined in this study. Data for scaled variables were examined for reliability through estimates of Cronbach's alpha, a measure of internal consistency (Thompson, 2003). Split-half reliability was estimated because the survey was a single administration of an online instrument, and test-retest was not an option (Crocker & Algina, 1986).

The dependent variable for most analyses was *Abstinence Status*. Primary abstainers were those that responded they had (a) never had vaginal sex and (b) made a conscious commitment to abstinence (defined as a "conscious commitment to refrain from sexual activity for an extended period of time"). Secondary abstainers were those who had (a) engaged in vaginal sex and (b) reported being *currently* committed to abstinence. Non-abstainers were students who had either (a) never made a commitment to abstinence or (b) reported they were not currently committed to abstinence.

Single-item variables included Self-efficacy to Remain Abstinent, measured by students' responses to "How confident are you that you can keep your commitment to abstinence" on a scale of 1 (not at all confident) to 4 (very confident), and Participation in an Abstinence Program, measured by students' yes or no responses to the question "Have you ever participated in an abstinence education program?"

The scaled variables were created by summing scores on multiple items to arrive at a single score for the factor of interest. Attitude Toward the Behavior was measured by a 26-item scale assessing both behavioral beliefs and students' expectancies associated with behavioral outcomes. For example, students responded on a scale of 1

(extremely unlikely) to 5 (extremely likely) to items such as "I would be less successful in school if I were sexually active," and then rated the value they placed on the outcome (in this case, "success in school") on a scale of 1 (it would be extremely bad) to 5 (it would be extremely good). Responses were reverse coded as necessary to create a scale in which higher scores indicated more positive, favorable attitudes regarding abstinence. Belief scores were multiplied by corresponding expectancy scores, and the products were summed to arrive at a score for the complete scale. The Cronbach's alpha for Attitude Toward the Behavior data was .859, and split-half reliability was .737.

Subjective Norm was measured in a similar manner. The 20-item scale assessed the degree to which students felt important others approved of abstinence (normative beliefs) and the likelihood that they would want to do what each referent believed was best for them (motivation to comply). Normative belief scores were multiplied by motivation to comply scores, and the products were summed. Higher scores indicated a subjective norm more supportive of abstinence. Cronbach's alpha for Subjective Norm data was .912; split-half reliability was .932.

Previous Negative Experiences were measured with an eight-item scale (Cronbach's alpha = .841; split-half reliability = .825) that assessed aspects of previous sexual experience such as positive feelings about the experience, guilt, pressure, continuance with sexual activity despite a desire to stop, effects on relationships, and overall feelings about self when sexually active. Higher scores indicated more negative previous experiences with sex.

Perceived Barriers were measured by an eight-item scale that assessed the degree to which students' viewed factors such as friends, alcohol, college environments, physical attraction, pressure, privacy from parents, involvement in a serious relationship, and perceptions about the acceptance of sex, as hindering the practice of abstinence. Higher scores indicated perceptions of more barriers. For this scale, Cronbach's alpha reached .819; split-half reliability was .846.

The Environmental Manipulation scale (Cronbach's alpha = .780; split-half reliability = .849) was designed to capture respondents' intentional manipulation of their environments in effort to make them more conducive to sexual abstinence. This 6-item scale measured their agreement with statements about shaping their settings to support abstinence through activities such as reducing time spent alone with a partner, limiting alcohol association, or only dating others committed to abstinence. Responses were scaled from 1 to 5, with higher scores indicating higher levels of environmental manipulation.

Two variables – Religious Ties and Motivation for Abstinence comprised several subscales. The Religious Ties scale included 12 items to measure multiple dimensions of religiosity as proposed by Social Control Theory. For data from the full scale, Cronbach's alpha was .933, and split-half reliability was .917. Confirmatory Factor Analyses (CFA) supported division into 3 subscales: attachment and involvement, commitment, and beliefs. For subscale items, factor scores, percent of variance explained, and Cronbach's alpha reliability measures, see Table 4.1.

Table 4.1: Factor Scores, Percent of Variance Explained by Each Factor, and Reliability of Motivation and Religious Ties Scales and Subscales Data Used to Predict Primary and Secondary Abstinence in a Sample of College Students

Scale: Subscale Item	Factor Score	% of Variance	Cronbach's alpha
Motivation	--		.856
Motivation: Faith		86.46%	.921
My faith/religious beliefs	.931		
Sacred texts (Bible, Koran, etc.)	.952		
People in my faith community	.907		
Motivation: Important others		69.54%	.777
My friends	.740		
My parents	.903		
My desire to avoid disappointing my family	.851		
Motivation: Power & Past		46.54%	.424
The fact that I have previously contracted an STI	.729		
My participation in an abstinence education program	.688		
My desire to maintain power within a relationship	.625		
Motivation: Opportunity		76.59%	.847
My lack of opportunity	.865		
The lack of current temptation	.885		
A lack of time to date	.875		
Motivation: Protection		65.09%	.726
My desire to avoid emotional pain	.688		
My concern about pregnancy	.840		
My concern about contracting an STI	.880		
Motivation: Success, school, and self		62.43%	.790
My desire to eliminate distraction in my life in order to be more successful	.884		
My desire to make good grades	.909		
A conservative A&M environment	.704		
Concerns about my body	.628		
Motivation: Feelings Toward Self		61.14%	.677
My increased maturity	.675		
My desire to feel better about myself	.856		
My desire to avoid or relieve feelings of guilt	.804		

Table 4.1 Continued.

Scale: Subscale Item	Factor Score	% of Variance	Cronbach's alpha
Motivation: Partner		80.65%	.760
My partner	.898		
My desire to protect my partner	.898		
Religious Ties	--		.933
Religious Ties: Attachment & Involvement		64.61%	.861
I feel connected to the other people in my faith community.	.770		
I value the opinions of others in my faith community.	.813		
I like to follow the beliefs/behavioral standards held by my faith community.	.864		
It is beneficial to me to follow the beliefs/behavioral standards of my faith community.	.861		
I would be negative affected if I did not follow the beliefs/behavioral standards of my faith community.	.700		
Religious Ties: Commitment		83.54%	.901
I regularly attend worship services with members of my faith community.	.884		
I am regularly involved in the study of sacred texts with members of my faith community.	.931		
I am regularly involved in fellowship activities with members of my faith community.	.926		
Religious Ties: Beliefs		70.91%	.861
My personal beliefs are in line with the beliefs of my faith community.	.881		
I follow the beliefs outlined by my faith community.	.869		
I am in agreement with my faith community's beliefs regarding sexual activity.	.868		
I am in agreement with my faith community's beliefs regarding contraception and/or birth control.	.743		

Scores for the full Motivation for Abstinence scale (Cronbach's alpha = .856; split-half reliability = .932) were constructed from 8 subscales focused on various dimensions of motivation expressed by students in previous qualitative research, including: faith, important others, power and past, opportunity, protection, feelings toward self, partner, and success, school, and self. These subscales were determined by exploratory factor analyses; see Table 4.1 for factor loadings and reliability results.

Exploratory factor analyses (EFA) were initially conducted with pilot test data. Findings from these analyses led to splitting the motivation and religious ties scales into subscales. The subscales were then re-examined through confirmatory factor analyses (CFAs) in the final data set. CFA results supported the validity of all the Religious Ties subscales and four of the Motivation subscales. The two motivation subscales remaining from the pilot test CFAs were each further divided into two scales resulting in the following four subscales: Faith, Important Others, Power and Past, and Opportunity.

Analyses

Prior to analyses, the data were examined for normality and multicollinearity. Data did not exhibit multicollinearity, and examination of skewness and kurtosis revealed all variables, with the exception of the age variables (current age and age of initiation of intercourse), were normally distributed. The non-normal distribution of the age variables was not problematic, however, because logistic regression does not require predictor variables to be normally distributed (Tabachnick & Fidell, 2001) (p. 517). In addition, data were examined for missing values and determined to be non-problematic due to low percentages of missing responses (less than 10% for each variable).

Descriptive statistics and frequency distributions were examined in order to characterize participants, and the theoretical model was tested through a series of regression analyses. SPSS® version 13.0 was used for the analyses, and an alpha level of 0.05 was used to determine statistical significance.

Results

Sample Characteristics

The majority of the sample was female (59.4%) and Caucasian (85.1%). Other ethnicities represented were Hispanic (10.0%), Asian/Pacific Islander (2.7%), African American/Black (1.6%), International (0.4%), and American Indian (0.2%). The mean age of participants was 20.52 (SD=2.50). In addition, less than half (38.7%) of participants reported drinking alcohol an average of at least once per week (61.3% drank less than once a week), and nearly three-quarters of participants (72.2%) identified themselves as being part of some type of faith community. In terms of relationship status, 38.7% were single and not dating, 53.6% were dating, 4.7% were engaged to be married, and 4.0% were married or previously married (Table 4.2).

In terms of sexual behaviors, students reported having experienced several different types of behaviors. Participants reported involvement in hand-holding (92.5%), closed-mouth kissing (89.8%), open-mouth kissing (87.2%), petting above the waist/hand-to-breast contact (80.6%), petting below the waist/hand-to-genital contact (75.7%), oral sex (65.7%), anal sex (17.2%), and vaginal sex (54.1%). Of sexually experienced participants, the average age of initiation of intercourse was 17.28 (SD=2.11). Although the majority of participants (66.4%) had never participated in an

Table 4.2. Frequency Distributions (in Percentages) of Select Demographic Characteristics, for Non-Abstainers, Primary Abstainers, and Secondary Abstainers in a College Sample

Characteristic	Not committed to abstinence (N=604)	Primary Abstainers (N=386)	Secondary Abstainers (N=142)	Total (N= 1132)
Gender	%	%	%	%
Female	55.5	63.7	64.1	59.4
Male	44.5	36.3	35.9	40.6
Ethnicity				
African/American	1.5	1.3	2.8	1.6
American Indian	0.3	0.0	0.0	0.2
Asian/Pacific Islander	3.0	2.3	2.1	2.7
Caucasian/White	84.2	88.3	80.3	85.1
Hispanic	10.6	7.3	14.8	10.0
International	0.3	0.8	0.0	0.4
Classification				
Freshman	20.1	28.8	17.6	22.8
Sophomore	19.5	19.7	19.0	19.5
Junior	23.1	24.4	28.2	24.2
Senior	37.3	26.7	35.2	33.4
Age				
Mean	20.8	19.8	20.9	20.5
Sexual Activity Experience				
Handholding	96.4	83.7	100.0	92.5
Closed-mouth kissing	95.4	77.4	100.0	89.8
Open-mouth kissing	94.4	71.2	100.0	87.2
Hand-to-breast contact	92.7	54.5	100.0	80.6
Hand-to-genital contact	90.8	43.5	99.3	75.7
Oral sex	85.6	23.2	95.8	65.7
Anal sex	25.5	0.8	26.6	17.2
Vaginal sex	77.7	0.0	100.0	54.1
Nature of first sexual experience				
Voluntary and wanted	83.0	--	69.8	80.0
Voluntary, but unwanted	14.3	--	25.9	16.9
Involuntary	2.8	--	4.3	3.1
Participated in Abst. Ed. Program?				
Yes	30.0	43.0	23.0	33.6
Alcohol Consumption				
Drink average of once/week	52.4	17.8	37.4	38.7
Member of faith community				
Yes	59.8	89.1	78.4	72.2
Relationship Status				
Single/not dating (never married)	28.2	56.9	33.1	38.7
Dating multiple people	6.9	3.7	7.2	5.8
Dating one person (not seriously)	8.3	7.4	5.8	7.7
Dating one person (seriously)	45.4	29.3	39.6	39.1
Engaged to be married	6.2	2.7	4.3	4.7
Married	4.8	0.0	7.2	3.5
Previously married	0.2	0.0	2.9	0.5

abstinence program, most (67.4%) reported having made a conscious commitment to practice abstinence at some point – either presently or in the past.

Abstinent Behavior

Approximately 45.9% (n=521) of the participants reported never having had vaginal sex. Of the total sample, 34.0% (n=386) were classified as "primary abstainers" – meaning that they had never had vaginal sex and were consciously committed to practicing abstinence, and 12.5% (n=142) were classified as "secondary abstainers" – meaning they made a conscious commitment to abstinence after having had sex.

Profiles for Different Types of Abstainers

Profiles for non-abstainers/students not committed to abstinence, primary abstainers, and secondary abstainers were developed from demographic characteristics. In this study's sample, the average person in each abstinence classification was female, Caucasian, and considered herself a member of a faith community. For non-abstainers/students not committed to abstinence, the average respondent was 20.8 years of age, a senior in college, and drank an average of at least once per week. The average primary abstainer was 19.8 years of age, a freshman, and drank an average of less than once per week, while the average secondary abstainer was 20.9 years of age, a senior, and also drank (on average) less than once a week. Table 4.2 contains further differences in demographic characteristics among classifications of abstainers.

Differences between Primary and Secondary Abstainers

In addition, several variables including Self-Efficacy to Remain Abstinent, Attitude Toward the Behavior, Subjective Norm, Perceived Barriers, Environmental

Manipulation, and the subscales of the main Motivation and Religious Ties scales were subjected to t-tests to identify significant differences in mean scores between primary and secondary abstainers (Table 4.3). Primary abstainers scored significantly higher than secondary abstainers on Self-Efficacy to Remain Abstinent (t = 7.68, p = .000, Cohen's *d* = .846), Attitude Toward Behavior (t = 2.45, p = .015, Cohen's *d* = .264), Subjective Norm (t = 5.30, p = .000, Cohen's *d* = .534), and Environmental Manipulation (t = 3.74, p = .000, Cohen's *d* = .372) scales. In contrast, secondary abstainers scored significantly higher than primary abstainers on their scores on Perceived Barriers to Abstinence (t = -3.28, p = .001, Cohen's *d* = .333).

Primary abstainers scored significantly higher than secondary abstainers on all three religious ties subscales – Attachment and Involvement (t = 3.51, p<.000, Cohen's *d* = .381), Commitment (t = 3.55, p<.000, Cohen's *d* = .398), and Beliefs (t = 5.17, p<.000, Cohen's *d* = .551). In addition, primary abstainers scored higher on the Faith (t = 5.70, p<.000, Cohen's *d* = .603) and Important Others (t = 4.02, p<.000, Cohen's *d* = .411) motivation subscales, while secondary abstainers scored significantly higher on the Power and Past (t = -0.27, p = .006, Cohen's *d* =.276), Success, School, and Self (t = -4.37, p<.000, Cohen's *d* = .425), and Feelings Toward Self (t = -4.85, p<.000, Cohen's *d* = .460) motivation subscales.

Predictors of Secondary Abstinence

Descriptive statistics for each of the variables in the model are presented in Table 4.3. Examination of means reveals that, for students who had engaged in vaginal sex, the average age of initiation was 17.2 years (SD=2.11) and, on average, participants'

Table 4.3. Mean Scores and Standard Deviations for Model Variables, and T-test Results for Differences in Religious Ties and Motivation Subscale Scores for Primary versus Secondary Abstainers

Variable *(Higher scores mean…)*	*Scale Range*	Total		Primary Abstainers		Secondary Abstainers		t-test for Differences Between Primary & Secondary Abstainers			
		Mean	SD	Mean	SD	Mean	SD	t	df	Sig.	Cohen's *d*
Age	--	20.52	2.50								
Timing of Sexual Initiation (Age of initiation)[2]	--	17.2	2.11								
Self-efficacy[1]	*1-4*	3.70	.539	3.83	0.41	3.36	0.67	7.68	174.39	.000*	.846
(higher self-efficacy to remain abstinent)											
Attitude Toward Behavior	*26-325*	155.19	55.22	188.81	45.05	175.51	55.05	2.45	194.64	.015*	.264
(more positive attitudes regarding abstinence)											
Subjective Norm	*20-250*	126.98	61.41	168.91	54.41	138.85	57.97	5.30	488	.000*	.534
(more supportive norms regarding abstinence)											
Previous Negative Experiences[2]	*8-40*	21.29	7.00								
(more negative previous experiences with sex)											
Perceived Barriers[1]	*8-40*	26.09	6.68	24.59	6.85	26.80	6.39	-3.28	513	.001*	.333
(more perceived barriers to abstinence)											
Environmental Manipulation[1]	*6-30*	17.05	5.52	18.59	5.27	16.59	5.48	3.74	512	.000*	.372
(more environmental manipulation)											
Initial Commitment to Abstinence (ever made?)	*0-1*	0.67	0.46								
(at some point, committed to abstinence)											
Religious Ties	*12-60*	34.13	17.47								
(greater religious ties)											
Attachment & Involvement	*5-25*			21.24	3.02	20.00	3.47	3.51	435	.000*	.381
Commitment	*3-15*			11.99	3.02	10.76	3.15	3.55	432	.000*	.398
Beliefs	*4-20*			16.90	2.68	15.29	3.14	5.17	431	.000*	.551
Motivation[1]	*25-125*	74.81	14.98								
(higher motivation for abstinence)											
Faith	*3-15*			13.12	2.88	11.02	3.99	5.70	129.29	.000*	.603
Important Others	*3-15*			10.89	3.12	9.51	3.57	4.02	220.36	.000*	.411
Power & Past	*3-15*			5.84	2.25	6.47	2.31	-0.27	516	.006*	.276
Opportunity	*3-15*			5.61	3.06	6.05	3.14	-1.41	516	.159	.141
Protection	*3-15*			11.09	3.35	11.43	2.91	-1.05	511	.294	.108
Success, School, and Self	*4-20*			9.24	3.97	11.02	4.38	-4.37	520	.000*	.425
Feelings Toward Self	*3-15*			10.15	3.08	11.46	2.59	-4.85	288.78	.000*	.460
Partner	*2-10*			6.37	2.57	6.69	2.50	-1.25	515	.211	.126

[1]Measured for Primary Abstainers and Secondary Abstainers Only
[2]Measured for Non-Abstainers and Secondary Abstainers Only

scale totals for questions regarding attitudes toward abstinence, subjective norm about abstinence, previous negative experiences with sex, perceived barriers, the use of environmental manipulation, ever making an initial commitment to abstinence, religious ties, and motivation for abstinence, fell near the theoretical midpoints of the scales.

To test the hypothesized relationships depicted in Figure 4.1, the model was divided into three sections. Each section was subjected to the appropriate regression analyses in order to identify factors predictive of secondary abstinence among individuals who had engaged in vaginal sex. The three model sections are designated in Figure 4.1 by variations in the lines for boxes and ovals around variable names – section 1 variables are outlined with solid lines (———), section 2 variables are outlined with uneven, dotted lines (— - - — - -), and section 3 variables are outlined with small dotted lines (- - - -).

The first section of the model [outlined in Figure 4.1 with solid lines] was tested through a series of binary logistic regression models (shown in Table 4.4), with "commitment to secondary abstinence" as the dependent variable, and gender, ethnicity, age, attitude toward the behavior (abstinence), subjective norm regarding abstinence, participation in an abstinence program, religious ties, and previous (negative) experiences as independent variables. The variables were added sequentially to each model until the final model tested all the factors simultaneously (Table 4.4). The models were examined only for students who had ever had vaginal sex. The final regression model revealed attitude toward the behavior (abstinence) (OR = 1.010; p = .002), subjective norm regarding abstinence (OR = 1.010; p = .001), religious ties (OR = 1.019;

Table 4.4. Odds Ratios and Probability Levels for Predictors of Secondary Abstinence (For All Participants Except Primary Abstainers) According to Logistic Regression Models

Predictors	Model 1 Nagelkerke R^2 = .008 Exp (B) (95% CI)	p	Model 2 Nagelkerke R^2 = .013 Exp (B) (95% CI)	p	Model 3 Nagelkerke R^2 = .215 Exp (B) (95% CI)	p	Model 4 Nagelkerke R^2 = .220 Exp (B) (95% CI)	p	Model 5 Nagelkerke R^2 = .334 Exp (B) (95% CI)	p
Gender	.693 (.474, 1.015)	.060	.692 (.470, 1.019)	.062	1.036 (.655, 1.637)	.880	1.009 (.638, 1.596)	.970	1.221 (.733, 2.034)	.444
Ethnicity	1.056 (.760, 1.468)	.745	1.010 (.725, 1.408)	.951	1.096 (.757, 1.588)	.627	1.128 (.776, 1.639)	.528	1.126 (.758, 1.672)	.557
Age	1.018 (.955, 1.085)	.590	1.013 (.950, 1.081)	.689	.989 (.912, 1.073)	.795	.983 (.906, 1.067)	.686	.948 (.866, 1.036)	.239
Participation in Abstinence Ed. Program			.736 (.475, 1.141)	.171	.638 (.385, 1.057)	.081	.645 (.389, 1.070)	.089	.572 (.328, .998)	.049*
Attitude Toward the Behavior (Abstinence)					1.011 (1.007, 1.016)	.000*	1.011 (1.005, 1.016)	.000*	1.010 (1.004, 1.017)	.002*
Subjective Norm (regarding abstinence)					1.010 (1.005, 1.015)	.000*	1.008 (1.002, 1.013)	.005*	1.010 (1.004, 1.016)	.001*
Religious Ties							1.014 (.996, 1.031)	.120	1.019 (1.000, 1.039)	.046*
Previous Negative Experiences									1.051 (1.008, 1.096)	.020*

*p<.05

p = .046), and previous negative experiences (OR = 1.051; p = .020) were significant predictors of committing to secondary abstinence following sexual initiation. Participation in an abstinence education program significantly reduced the likelihood of committing to secondary abstinence in this sample (OR = .572; p = .049) (see Table 4.4). The final model explained 33.4% of the total variance.

The second section of the model [variables outlined in uneven, dotted lines (— - - — - -)] hypothesized that making an initial commitment to abstinence would influence the age of initiation of intercourse (the mediating variable), which would, in turn, influence a commitment to secondary abstinence among students that had had vaginal sex. This hypothesis was also tested through a series of regression models (Baron & Kenny, 1986). The first model examined making an initial commitment to abstinence as predictive of age of initiation (β = .063, p = .119, model adjusted R^2 = .002). The second model examined making an initial commitment to abstinence as predictive of secondary abstinence (OR = 9.7E+.008, p = .992). The final model examined both making an initial commitment to abstinence (OR = 1.2E+009, p = .993) and age of initiation (OR = 1.026, p = .604) as predictive of secondary abstinence. Results revealed none of the models contained significant predictors, therefore, the proposed relationship of an initial commitment to abstinence affecting secondary abstinence via the mediating variable of age of initiation of intercourse was not supported.

In testing the third, and final, section of the model [with variables outlined by a small dotted line (- - - -)], several multiple regression models were used to determine if the independent variables (perceived barriers to abstinence, environmental manipulation

(to support abstinence), motivation for abstinence, and religious ties) were significant predictors of the dependent variable, self-efficacy for abstinence among secondary abstainers (Table 4.5). The regression models were also run with sequential addition of variables. Results for the final model (with all variables) revealed fewer perceived barriers (β = -.331; p < .000), less environmental manipulation (β = -.230; p = .035), and greater religious ties (β = .301; p = .003) were significant predictors of self-efficacy for abstinence (see Table 4.5). Total variance explained by the final model was 14.8%.

Predictors of Primary Abstinence

While not the main objective of this study, a series of logistic regression analyses were conducted to identify significant predictors of primary abstinence, as well. Results of the final regression model revealed that younger age (OR = .795; p <.000), participation in an abstinence education program (OR = 1.434; p = .039), more positive attitude toward abstinence (OR = 1.007; p <.000), a more supportive subjective norm regarding abstinence (OR = 1.012; p <.000), and greater religious ties (OR = 1.030; p <.000) were predictive of primary abstinence in this sample (see Table 4.6). Gender and ethnicity were not significant predictors. Total variance explained by the final model was 41.7%.

Discussion

Prevalence of Primary and Secondary Abstinence

This study provides prevalence estimates, for this sample, of both primary and secondary abstinence. Of the total sample, 34.0% were classified as “primary

Table 4.5. Beta Coefficients and Probability Levels for Predictors of Self-Efficacy to Practice Abstinence According to Linear Regression Models (for Primary and Secondary Abstainers)

Predictors	Model 1 Adj. R^2 = .083		Model 2 Adj. R^2 = .078		Model 3 Adj. R^2 = .090		Model 4 Adj. R^2 = .148	
	β	p	β	p	β	p	β	p
Perceived Barriers to abstinence	-.299	.000*	-.302	.001*	-.342	.000*	-.331	.000*
Environmental manipulation			.000	.997	-.078	.429	-.230	.035*
Motivation for abstinence					.158	.124	.127	.203
Religious Ties							.301	.003*

*p<.05

Table 4.6. Odds Ratios and Probability Levels for Predictors of Primary Abstinence According to Logistic Regression Models

Predictors	Model 1 Nagelkerke R^2 = .067 Exp (B) (95% CI)	p	Model 2 Nagelkerke R^2 = .095 Exp (B) (95% CI)	p	Model 3 Nagelkerke R^2 = .396 Exp (B) (95% CI)	p	Model 4 Nagelkerke R^2 = .417 Exp (B) (95% CI)	p
Gender	.822 (.633, 1.067)	.140	.769 (.588, 1.005)	.055	1.212 (.863, 1.702)	.267	1.120 (.794, 1.581)	.518
Ethnicity	1.072 (.846, 1.357)	.565	1.151 (.905, 1.465)	.252	1.187 (.882, 1.599)	.258	1.246 (.920, 1.688)	.156
Age	.782 (.725, .843)	.000*	.787 (.728, .850)	.000*	.807 (.732, .889)	.000*	.795 (.720, .878)	.000*
Participation in Abstinence Ed Program			1.825 (1.395, 2.388)	.000*	1.416 (1.010, 1.986)	.043*	1.434 (1.018, 2.021)	.039*
Attitude Toward the Behavior (Abstinence)					1.009 (1.005, 1.013)	.000*	1.007 (1.003, 1.011)	.000*
Subjective Norm (regarding abstinence)					1.016 (1.012, 1.019)	.000*	1.012 (1.008, 1.016)	.000*
Religious Ties							1.030 (1.017, 1.044)	.000*

*p<.05

abstainers." These individuals had never had vaginal sex and had made conscious commitments to practicing abstinence. Individuals who had never had sex but also never made a conscious and purposeful decision to refrain from it, were not included in this group.

"Secondary abstainers" – participants who reported having made a conscious commitment to abstinence after having had vaginal sex – made up 12.5% (n=142) of the total sample. This is one of the first estimates of prevalence of secondary abstinence in a college population. Comparisons to other populations are difficult given the paucity of published research on this particular behavior. This is higher than the prevalence rate of 2.6% reported for secondary abstinent behavior among 9th and 12th grade students in Minnesota (Loewenson et al., 2004). It seems logical that, given their older age and thus greater opportunity to be sexually active, college students would exhibit higher rates of secondary abstinence than would high school students, but we cannot discount the possibility that this sample suffered from self-selection bias (an important limitation of this study). Given the "novelty" of the research topic, secondary abstainers may have chosen to participate in the study in larger numbers than the general population, thus biasing the prevalence rates upward.

Predictors of Abstinence

Logistic regression analyses revealed that younger age, participation in an abstinence education program, more positive attitudes toward abstinence, more favorable subjective norm regarding abstinence, and greater religious ties were predictive of *primary* abstinence. It is important to note, however, that attitude toward the behavior,

subjective norm, and religious ties each exhibited small odds ratios at 1.007, 1.012, and 1.030, respectively, and could well be a function of the large sample size, as power to identify statistical significance is partially a function of sample size (Cohen, Cohen, West, & Aiken, 2003). The largest effects were seen for age and participation in an abstinence education program such that older students were approximately 20% less likely to practice primary abstinence and students that had participated in abstinence education were approximately 40% *more* likely than their peers to be primary abstainers.

In identifying factors influencing *secondary* abstinence, the proposed theoretical model was divided into three sections for testing. In testing the first section of the model, binary logistic regression analyses revealed attitude toward the behavior, subjective norm, religious ties, and having more negative previous experiences with sex significantly predicted secondary abstinence, but exhibited small odds ratios (1.010, 1.010, 1.019, and 1.051, respectively). The largest effect was seen for participation in an abstinence education program. In contrast to the results for primary abstinence, participation in such a program actually *reduced* the likelihood (by over 40%) that a student would be classified as a secondary abstainer, in this sample.

Such different effects of reported participation in abstinence education programs for primary and secondary abstainers seem difficult to explain, but if in this population of college students these effects are, indeed, true, this is both encouraging and discouraging. While increased likelihood of primary abstinence would be viewed as a success for most abstinence program personnel, the significant reduction in likelihood of committing to secondary abstinence would be exactly the opposite of most abstinence

program goals. These data, however, inevitably raise the question, "Is there something about abstinence education programming that actually discourages abstinence among those that have already initiated sexual activity?" Our data cannot answer this, but further research exploring this finding is clearly warranted.

In the absence of any sound data-based explanations for this finding, theoretical perspectives offer guidance. The psychological theory of self-persuasion offers one possible explanation (Zimbardo, 1965). If abstinence education programs delivered messages portraying sexual activity as wrong and/or detrimental to youth, it is possible that sexually active youth in those programs might have countered instructor messages by internally creating arguments against the pro-abstinent message and, in essence, in defense of their own previous behavior – almost as a protective mechanism. If this were true, self-persuasion theory suggests that arguing a specific attitude position (in this case, building internal arguments to support or defend their past sexually active behavior) could result in modification of personal attitudes to be similar to the position argued (Zimbardo, 1965). Such a phenomenon might well be occurring among sexually active youth who participate in abstinence education programs.

Ultimately, this study cannot explain the role of abstinence education in secondary abstinence. While plausible that programs may be directly affecting behavior, our study's findings may also have suffered from measurement error. Given that "abstinent education programs" was not defined for study respondents, many could have interpreted their experiences with, for instance, 1-hour lectures on the topic, as participation in a "program." The effects of such experiences on likelihood of behavior

would be, however trivial or non-existent. Regardless of the possibilities, the lack of explanation for the role of abstinence education highlights an important focal point for future research. As long as abstinence programs are being delivered to sexually active youth, it is imperative that program personnel ensure they are having protective, rather than unintended, detrimental, effects.

Testing of the second section of the hypothesized model revealed no support for the proposed relationship of an initial commitment to abstinence affecting secondary abstinence via the mediating variable of age of initiation of intercourse. Furthermore, neither age of initiation nor making an initial commitment to abstinence was an independent predictor of practicing secondary abstinence. This was surprising, as one would expect that initiation at an earlier age would allow for a greater time frame in which adolescents could change their minds about sexual behavior and choose to commit to abstinence.

In testing the third section of the model, multiple regression analyses revealed fewer perceived barriers, less environmental manipulation, and greater religious ties were significant predictors of self-efficacy for abstinence. This indicates students with greater confidence they could remain abstinent were those that exhibited greater ties to a faith community and perceived there were fewer situations and events that would make abstinence difficult. In addition, those with high self-efficacy reported less manipulation of their environments (i.e. avoiding being alone with a partner, avoidance of alcohol, not dating, etc.) for the purpose of making abstinence easier. This was actually the opposite of what was expected. Self-Efficacy Theory suggests that higher self-efficacy,

particularly coping efficacy, would be associated with the adoption of "strategies and courses of action designed to change hazardous environments into more benign ones" (Bandura, 1997, p. 141), (i.e., greater environmental manipulation). That was not seen in this sample, but perhaps these students perceived few barriers to abstinence (thereby viewing their environments as less hazardous), and as a result, felt little need to change any factors in their social or physical environments.

Differences between Primary and Secondary Abstainers

Primary abstainers exhibited significantly higher levels of self-efficacy, more positive attitudes toward abstinence, stronger perceptions of abstinence-supportive norms, and higher levels of environmental manipulation, when compared to secondary abstainers in this sample. The largest difference was seen for respondents' self-efficacy levels (Cohen's $d = .846$). Such a finding is logical when examined in light of Self-Efficacy theory, which would suggest that mastery experiences (such as always having been successful practicing abstinence) would lead to higher self-efficacy (Bandura, 1997). In contrast, secondary abstainers score significantly higher than primary abstainers on Perceived Barriers to Abstinence, which is also logical when considering that secondary abstainers have obviously faced barriers to abstinence, as they have already initiated vaginal sex. This difference was, however, smaller in magnitude (Cohen's $d = .333$).

Analyses examining differences in Religious Ties subscale scores between primary and secondary abstainers revealed primary abstainers scored significantly higher than secondary abstainers on all three religious ties subscales, with the largest effect size

found for the subscale of beliefs (Cohen's $d = 551$). This finding is in line with Social Control Theory, which suggests that greater religious ties (as operationalized in this study) would provide stronger controls against the "undesirable" behavior (Hirschi, 1969). It may be that the stronger religious ties of primary abstainers have served as more effective controls against sexually active behavior (thus, they had not yet initiated vaginal sex).

The results for t-tests examining differences in Motivation subscales were mixed. While primary abstainers scored higher on the Faith (with a mid-range Cohen's *d* effect size of .603) and Important Others motivation subscales, secondary abstainers scored significantly higher on the Power and Past, Success, School, and Self, and Feelings Toward Self motivation subscales (with Cohen's *d* effect sizes falling in the small-medium range between -.276 and -.460). Again, these results do not mean that the motivation dimension for which one group scored higher were not important motivators for the other group as well; the results do, however, point out some interesting differences among the groups. Primary abstainers were more motivated than secondary abstainers by the religiosity factors and the opinions of important others such as friends, family, and parents. In contrast, secondary abstainers were more motivated by factors related to themselves and their futures (such as feeling better about themselves, avoiding or relieving feelings of guilt, making good grades, and being successful), previous experiences (having contracted an STI, having participated in an abstinence program), and maintaining power in the relationship. Such findings offer clues for practitioners working to tailor messages to either sexually experienced or sexually inexperienced

adolescents. The results suggest that different dimensions of motivation may carry varying degrees of importance depending on the type of abstinence being practiced.

Limitations

This research on secondary sexual abstinence is unique in that it fills a void currently unexplored in the scientific literature. It is, to our knowledge, one of the first estimates of the practice of secondary abstinence among a college sample. In addition, it provides valuable insight into the types of motivators that may be unique for secondary abstinence, including adolescents' desire to feel better about themselves. Further, it raises an important question of the effect that abstinence education may have on sexually experienced youth.

The study does, however, have limitations. The data, for instance, were self-reported and cross-sectional. While statistically significant associations were identified, it was not possible to determine whether one variable "caused" another. Furthermore, although data accuracy was enhanced by the use of online questionnaires that converted responses into spreadsheet format – thus eliminating entry mistakes – it is still possible that social desirability bias or inability to accurately remember past experiences may have affected the truthfulness of participants' responses. The potential impact of social desirability was likely reduced through the use of anonymous online data collection (Daley, McDermott, McCormack Brown, & Kittleson, 2003; King & Bruner, 2000).

In addition, the research is limited because findings cannot be generalized to populations other than that sampled. In addition to reduced representation due to the low response rate, the universities' locations in Texas make them unique, and further limit

the potential to generalize findings to other college populations. In addition, the ability to generalize even to the entire population of students from this university system is questionable due to some of this sample's characteristics. For instance, the rates of sexual activity (54.1% of the sample had had vaginal sex) are low compared to national data revealing that 46.7% of high school students (Centers for Disease Control and Prevention [CDC], 2004) and 86.1% of college students have had sex (Centers for Disease Control and Prevention [CDC], 1997).

These rates suggest that the sample may be biased in favor of abstinence. While it is possible that sexual activity rates are low among this group of students, it is also possible that this research appealed more to abstinent students than to those who were currently sexually active. Further analyses of participants who completed less than half of the survey revealed that the group of students who did not finish reported significantly higher rates of having had vaginal sex. This supports the hypothesis that bias towards abstinence might be present, thus limiting the external validity of the study.

In spite of the limitations, however, this research fills a gap in the scientific literature in regards to secondary sexual abstinence. It illustrates that there are, in fact, college students that choose to practice abstinence after having initiated sexual intercourse, many of whom are eager to share their opinions and experiences regarding secondary abstinence. Increased understanding of the multiple facets of secondary abstinence, especially the various dimensions of motivation, may help health professionals interact more effectively with and offer important guidance to their clients/students.

CHAPTER V

A MIXED-METHODS EXAMINATION OF TERMINOLOGY FOR SECONDARY SEXUAL ABSTINENCE

Overview

Researchers and health professionals have recently focused much attention on abstinence-only or abstinence-only-until-marriage programs, especially as federal funding for these interventions has increased (Bassett et al., 2002; Marx & Hopper, 2005; Rosenberg, 2002; Stewart et al., 2003; Thomas, 2000; Wiley & Terlosky, 2000). In addition, research has been conducted on the antecedents of both sexual behavior and abstinence among adolescents (Blinn-Pike et al., 2004; Dunsmore, 2005; Else-Quest et al., 2005; Kirby, 2001, 2002; Lammers et al., 2000; Santelli et al., 2004), and from among thesse findings, an interesting concept has emerged – that of secondary abstinence (Loewenson et al., 2004; Thomas, 2000).

Secondary abstinence is defined as the practice of sexual abstinence following sexual initiation (and often a period of sexual activity) (Loewenson et al., 2004; Thomas, 2000). To the best of our knowledge, only one study to date has assessed the prevalence of a conscious commitment to secondary abstinence. The 2004 study of ninth and twelfth grade Minnesota students found 3% of males and 2% of females in the sample practiced secondary abstinence. The reasons participants endorsed as motivators for secondary abstinence included fear of pregnancy and other negative consequences as

well as normative beliefs about the appropriateness of being sexually active (Loewenson et al., 2004).

In spite of a lack of data gathered from secondary abstainers themselves, a review of literature – both scientific and non-scientific – reveals a wide range of terminology used by researchers and practitioners to describe the practice. Terms such as "new virginity" (Boehmer et al., 2000, p. 29) and "renewed or secondary virginity" (Worth Waiting For, 2002, p. 134) are appearing with increasing frequency in both abstinence programs (Boehmer et al., 2000; Worth Waiting For, 2002) and the popular media (Ali, Scelfo, Downey, & Juarez, 2002; Hill, 2005). This introduces a potential problem for both researchers and health professionals. Both groups have "tended to equate abstinence with virginity" (Norris et al., 2003, p. 140), interpreting "abstinent" as "being a virgin," and "virgin" as never having had intercourse.

Such assumptions, however, cannot be made with the changing language of abstinence. If programs are teaching that sexually active youth can re-commit to abstinence and, thus, become "renewed virgins," the use of the label "virgin" (especially by sexually experienced youth) may lead to some health-compromising, and potentially dangerous miscommunication. For example, an adolescent who tells a doctor he/she is a virgin after having been sexually active runs the risk of not being tested for (and therefore, not diagnosed with) sexually transmitted infections (STIs). Furthermore, if that same individual tells a partner he/she is a virgin, the partner might unknowingly allow him/herself to be exposed to sexually transmitted infections. Because of the potential for miscommunication, it is important to explore health practitioners' and

secondary abstainers' use and understanding of the terminology for secondary abstinence. This study focused on the latter group, attempting to uncover the language and the meanings young adults associate with the construct of secondary abstinence.

Purpose

The purpose of this study was to explore – through a mixed-methods approach – the terminology a sample of college undergraduate students in Texas used to describe secondary abstinence. Particular attention was paid to the language secondary abstainers used to refer to, or to characterize, themselves.

Method

The data for this paper were gathered through deployment of both qualitative and quantitative data-gathering tools. In a first step, qualitative interviews with college students in the spring and summer of 2005 were conducted. Analyses of the data from these interviews informed the development of a set of questions subsequently included in a survey administered to a sample of college undergraduates. The set of questions focused, specifically, on terminology used by respondents to refer to secondary abstinence and/or to themselves as secondary abstainers.

Qualitative Procedures

Following IRB approval, the researcher recruited participants in Kinesiology courses at a large public university in Texas. All students completed forms to provide contact information and indicate eligibility and willingness to participate in the study. Eligible, willing students were contacted for interviews, and all other student information was destroyed.

Participants included male and female undergraduate students between 18 and 24 years of age. Eligible students were those that had been "sexually active in the past, but were not currently sexually active." In addition to the classroom recruitment, a "snowball" technique was used throughout the interviews: participants were asked to refer other secondary abstainers who might be willing to participate in the study (Lincoln & Guba, 1985, p. 232), although only one interview was secured in this way.

Face-to-face interviews lasted between 30 and 75 minutes and, upon agreement from participants, most were audio taped. (Four participants asked not to be recorded.) Interviews were focused on participants' general experiences with and motivations for secondary abstinence (see Chapter III), as well as terminology related to the concept of "secondary virginity." Although the researcher worked from a pre-constructed interview guide, an "emergent design" allowed flexibility to explore unexpected concepts that surfaced throughout the interviews (Lincoln & Guba, 1985, p. 225).

It is important, however, to remember that in qualitative research, the instrument for data collection is the investigator, rather than a paper-pencil test or tool (Lincoln & Guba, 1985). Because the researcher is the tool for gathering and interpreting data, it is useful to disclose any predispositions or biases that may have been introduced by the investigator (Patton, 2002). In this case, as a college campus health educator, the researcher entered into the data collection process expecting to have difficulties securing study participants, anticipating low prevalence rates of secondary abstinence among the sample, and anticipating multiple influences for the behavior. Aware of her own bias towards the potential impact of religiosity, she made a purposeful effort to avoid alerting

respondents to her personal beliefs. Furthermore, her comfort with a wide-range of sexuality-related issues (partially due to her experience teaching human sexuality classes) allowed her to react calmly and without surprise to participants' reports of various dimensions and elements of their sexual histories.

Quantitative Procedures

In the fall of 2005, listings of undergraduate student names and corresponding e-mail addresses were collected from three universities, all part of a single university system in Texas. These listings served as the sampling frame for the random selection of 6,000 students designed to represent a total student population of 41,808. Survey invitations, as well as a web-link for the survey, were e-mailed to the students, and a follow-up e-mail was sent one week later. Following completion of the survey, participants could register to win 1 of 4 DVD players. (Drawing registration was conducted through a separate weblink – to preserve anonymity – and respondents were not required to enter.) In total, 5,659 survey invitations were deliverable, and 1,133 students participated (a 20.0% response rate).

Development of the questions in the survey instrument was based on data from the interviews, on other scientific literature about sexual abstinence among adolescents, and on various health behavior and behavior change theories (Theory of Planned Behavior, Social Control Theory, Health Belief Model, Social Cognitive Theory, and the AIDS Risk Reduction Model). The instrument was drafted, compared to qualitative results, and revised multiple times. It was then reviewed by five experts in health education and/or sexual health/sexuality education. Experts' comments were used to

create a final version of the survey, which was pilot-tested with 143 students from one of the universities in the sample.

The 45-item instrument assessed a specific set of variables, hypothesized to be related to sexual behavior, including demographic characteristics, level of sexual activity, and commitment to abstinence. The instrument contained a set of questions designed specifically to assess respondents' familiarity with existing terms/labels for secondary abstinence, and their personal use of these term/labels to describe their own sexual activity status. The survey was administered online, allowing convenient and anonymous response for participants. Informed consent was given on the initial survey page, and estimated time of completion ranged from 10 to 15 minutes. This study was approved by the Institutional Review Board (IRB) of the local university, and proof of IRB approval was provided to the other two universities.

This report focuses on three measures related to respondents' knowledge and use of specific terminology for secondary abstinence: Abstinence Status, Familiar Labels for Secondary Abstinence, and Label for Self. Answers to the Abstinence Status question(s) classified respondents into three groups. "Primary abstainers were those that responded they had (a) never had vaginal sex and (b) made a conscious commitment to abstinence (defined as a 'conscious commitment to refrain from sexual activity for an extended period of time'). Secondary abstainers were those who had (a) engaged in vaginal sex and (b) reported being *currently* committed to abstinence. Non-abstainers were respondents who had either (a) never made a commitment to abstinence or (b) reported they were not currently committed to abstinence" (see Chapter IV).

The factor Familiar Labels for Secondary Abstinence was based on participants responses to the item: "Which of the following labels have you heard used to describe individuals who have been sexually active in the past, but are now committed to abstinence?" Response options, based on the qualitative results, included virgin, secondary virgin, renewed virgin, born-again virgin, none of the above, and an "other" option with the opportunity for listing additional terms.

The Label for Self variable was based on responses to: "If someone were to ask you, how would you label yourself in terms of [your] sexual activity status?" Response options included virgin, secondary virgin, renewed virgin, born-again virgin, abstinent, and sexually active.

Analyses

Interviews

Within 24 hours of each interview, the investigator prepared transcripts based on the recordings and/or hand-written notes. Immediate preparation of transcripts by the interviewer is believed to have increased data accuracy. Transcripts were divided into individual data units (the smallest segments remaining meaningful when standing alone), separated, and classified by common themes using a "constant comparison method" (Lincoln & Guba, 1985, p. 341). Data units were compared to previous units for grouping into categories. Larger categories were later broken into smaller, more specific classifications whenever appropriate. This process continued until data had been "fleshed out" to explain the topics of interest.

Survey

Survey data were used to validate the findings of the qualitative study and provide estimates of the frequency of use of each of the terms of interest. Frequency distributions were examined for the two terminology-related items on the survey. Distribution of responses regarding *Labels for Self* were examined by groups – secondary abstainers, primary abstainers, and non-abstainers.

Results

Interview Data

In all, 696 students were informed of the study in one of their classes. A total of 64 (9.2%) identified themselves as eligible and willing to participate. Of those 64 students, several decided not to participate, and several were simply unable to schedule an interview during the project's timeframe. The final sample, therefore, included 20 students – 7 males and 13 female – a sample size sufficient for achieving theoretical saturation.

Participants were undergraduate students ages 18 to 24, and most were originally from Texas. None had ever been married, and all spoke only of heterosexual sexual activity. All but one respondent (n=19) had participated in penile-vaginal intercourse. The remaining student responded to the interview request because she considered herself "sexually active" after having had oral sex.

In addition to providing more general descriptions of their experiences with secondary abstinence (see Chapter III), respondents were asked to share any terms they had heard used for people who made the transition from sexually active to abstinent.

Several participants reported having never heard terms for this transition – at least not until coming in contact with the researcher, but 10 participants reported having heard such terms before – from sources such as school, church programs, and/or friends. Terms included "born-again," "born again virgin," "reborn virgin," "second virgin," "second virginity," "secondary abstinence," and "abstinence." Participants also mentioned having heard the terms "gay," "idiot," and "non-practicing virgin" used to disparagingly refer to people who had chosen to practice secondary abstinence.

The terms "born-again," "born-again virgin," and "reborn virgin" have obvious religious connotations [consistent with the finding that one of the primary motivations for secondary abstinence was religion (see Chapter III)]. One participant attempted to define "born again virgin:"

> It's just like you coming to Christ, like, 'hey, I've made mistakes, like, please give me another chance.' And it's, it's like you feel like you are getting a chance to start all over. Your slate's clean. Likes, it's like it never happened in the eyes of God. I mean, he knows it happened, but you know, unconditional love. He forgives you (female participant).

The recurring use of the word "virgin" is of particular interest. One participant pointed out that the term "second virginity" is "kind of an oxymoron" (female participant). Even so, respondents continued to mention terms related to virginity. It appeared that, for this sample, if being abstinent was perceived as desirable, virginity was viewed as even more valuable, possibly because it is perceived as reflective of who a person *is*, not just what he/she *does*.

> It's [a virgin is] definitely something I would love to be…. I definitely envy other people who are [virgins] – that have made that decision…. Like it's one thing to be a born-again virgin, but still you've slept with people. And like you know that deep down inside (female participant).

After discussing existing terms for secondary abstinence, it was interesting to examine the ways in which participants actually described themselves in terms of sexual activity status. The first person interviewed provided a very intriguing perspective. To her parents, she simply said she was practicing abstinence. And although she claimed she would never tell a doctor that she was a "virgin," she said that if someone new were to ask, she'd probably say she was a "virgin." When asked to explain this, she said,

> just because I kind of feel like I'll eventually get to the point where I kind of am again. You know, not really, but you know what I mean…. Like, cause by the time I get married, I will have not been having sex for a long time, like years and years – way longer than I did have sex. And so I kind of feel like I will not be like a literal virgin, but I will be as good as I can be in my eyes, you know. Cause I feel like I'm rewrapping my package *(said with a smile)* (female participant).

Participants had different perspectives regarding characterizing or labeling themselves as "abstinent." While some participants described themselves as merely "abstinent" or "practicing abstinence," one male more specifically described himself as "95% abstinent – 97, maybe." Other participants felt that describing themselves as abstinent would be misleading due to previous sexual activity. Partially for this reason, several respondents said that if questioned about sexual activity status, they would simply explain that they had been sexually active in the past but were currently committed to abstinence. Another participant agreed that the term abstinent might not completely describe her, but she would not want to actually say that she had been sexually active; instead, she would simply say, "I'm not having sex 'til I'm married" (female participant).

In examining the labels participants used to described themselves, interviews often began to focus on the extent to which they disclosed their sexual activity status to others and variations in the manner in which they did this. One group that respondents spoke of sharing (or not sharing) their sexual experience with was "friends" and, interestingly, there did not seem to be a pattern in participants' decisions to let friends know about their sexual status. Several participants reported that friends tended to know about both their sexual experience and their commitment to abstinence, but in some cases, they did not.

In addition to friends, participants were asked if they would tell their doctors and their current partners they had been sexually active. All of the participants who were asked agreed that they either had told their doctors/physicians or would tell them. This was also true for current partners and/or future partners.

When questioned further, participants expanded on the ways they would describe their sexual activity status to a future partner. Although all participants agreed they would share their sexual histories with a future partner before having sex with that person, they varied in the manner in which initial communication would convey their status. One female explained that she would initially probably tell a 'new guy' that she was a 'virgin,' but if the relationship got serious, she would tell him about her previous sexual activity. Several other participants shared they would explain to partners that they didn't want to have sex until marriage. There were no noticeable gender differences related to use of specific terminology, nor disclosure of status to friends, physicians, and future partners.

Survey Data

Findings from the analysis of interviews – in terms of labels used to describe secondary abstinence and one's own sexual activity status – were further explored in a survey, with a separate (but demographically similar) sample. Participants in this group were asked if they had heard of various terms sometimes used to describe individuals who practice secondary abstinence. In the total sample (N = 1,133), 57.1% had heard of "born-again virgin," 26.9% had heard of "renewed virgin," 19.8% had heard of "secondary virgin," 13.1% had heard of using the term "virgin," and 24.9% had not heard of any of these terms.

Participants were then asked which terms they would use to describe themselves. The majority of respondents not committed to abstinence reported describing themselves as "sexually active" (73.6%), but they also used terms "virgin" (19.1%), "abstinent" (4.2%), "secondary virgin" (2.1%), "renewed virgin" (0.9%), and "born-again virgin" (0.2%). Primary abstainers described themselves as "virgins" (93.3%), "abstinent" (6.4%), and "born-again virgins" (0.3%). While secondary abstainers most often reported describing themselves as "abstinent" (49.3%), other labels they utilized included "sexually active" (25.0%), "born-again virgin" (10.3%), "renewed virgin" (5.9%), "virgin" (5.1%), and "secondary virgin" (4.4%).

Discussion

The original decision to examine terminology related to secondary abstinence was related to the health risks that could proliferate if previously sexually active youth begin describing themselves as "virgins." Certainly, such a description would imply to a

future partner that he/she is putting him/herself at little risk for STIs, and might lead a physician to inadvertently overlook important screening procedures for a patient. Of primary concern here, then, was the degree to which secondary abstainers might use labels that inaccurately reflect their actual sexual experience.

According to the interviews, however, labels based on some variation of the term "virgin" were rarely used. While several participants did identify with the desirability of being "virgins," only one person actually said she would use that term to describe herself. Even so, she went on to clarify that before ever being sexually active with a future partner, she would be upfront about her sexually active past. This reduces the health risks that might be faced by a partner.

Interview participants reported hearing a variety of terms to describe secondary abstainers (born-again, born again virgin, reborn virgin, second virgin, second virginity, secondary abstinence, and abstinence), and familiarity with these terms was further examined in the survey data from a different sample of college students. Participants from that sample, which included non-abstainers, primary abstainers, and secondary abstainers, reported that the most familiar term used to describe secondary abstainers was "born-again virgin." This is interesting, as the term "born-again" has religious connotations, and in fact, other qualitative data indicated that religiosity was, in fact, one of the most common triggers for adolescents to commit to abstinence following being sexually active (see Chapter III). This was not, however, the most commonly used term by those actually practicing secondary abstinence.

Rather than using terms such as "secondary abstainer" or "born-again virgin," most of the interview participants reported describing themselves either as "abstinent" or through simply explaining the fact that while they hadn't always been abstinent, they were now. These findings were supported by results from the survey data. Only 20.6% reported describing themselves as either "born-again virgins," "renewed virgins," or "secondary virgins." Instead, approximately half of secondary abstainers said they would label themselves as simply "abstinent," which is consistent with the previous qualitative results. The remaining quarter of secondary abstainers reported describing themselves simply as "sexually active."

These data indicate that, contrary to initial concerns, terminology based on "virginity" actually may be less problematic than use of the label "abstinent." Participants who used some *variation* of "virgin" (secondary virgin, renewed virgin, etc.) to describe themselves may have been more accurately conveying their true sexual experience than those who simply described themselves as "abstinent." Use of this term by secondary abstainers is likely to suggest a lack of sexual experience (and thereby, STI risk) that is inaccurate. Although the term may feel more truthful to the user, it may, in fact, be more misleading if health professionals or partners are unaware of the concept of secondary abstinence or if they interpret the notion of sexual abstinence in minimalist ways (for a discussion regarding definitions of the term abstinence, see Goodson et al., 2003, Horan, Phillips, & Hagan, 1998, Remez, 2000, and Sanders & Reinisch, 1999).

All interview participants – including those describing themselves as abstinent – did state that they would reveal their full sexual histories to future partners. This finding

is consistent with research on college women conducted in 2004 that found the majority of participants in that sample (many of whom were highly religious, as were most in this study) claimed they would share their sexual history with a partner (Davidson et al., 2004). It is, however, important to remember that interview participants in the present study were aware of the researcher's health education background, and they might have been providing the most socially acceptable answers.

Furthermore, potential personal health risks associated with improper terminology – in the qualitative sample – seem limited since all participants stated they would be truthful about their sexual activity with a physician. Many, in fact, had already told doctors of their previous sexual experience. The ones that had not, claimed they had not had an opportunity (or need) as of yet, but they would definitely do so in the future.

There are a few messages in these data for health professionals. First, the social construction of meanings for terms such as "virgin" (and its variations) implies that these meanings are changing, over time. It is important, therefore, not to assume that an adolescent's or client's interpretation of virginity matches that of professionals'. Second, practicing "abstinence" should not be interpreted as "having never had sex," as has been pointed out by other researchers (Goodson et al., 2003; Norris et al., 2003), for, nearly half of the secondary abstainers in our sample (all of whom have been sexually active) would now describe themselves as "abstinent." Not only should health professionals remember that "abstinent" youth may have been exposed to risks from sexual activity, they should remember that when teaching adolescents/clients the importance of learning sexual histories of new partners, it is necessary to point out that

labels such as “abstinent” may not accurately reflect low- or no-risk situations. In such cases, adolescents should be encouraged to use more probing questions to determine actual risk.

Limitations and Implications

As qualitative findings cannot be generalized to other populations, this study is unable to generate broad inferences applicable to all college students nation-wide. Furthermore, the sample being interviewed may suffer from self-selection bias, as interviews could only be conducted with secondary abstainers agreeing to discuss their sexual activity with a stranger. If there were individuals who committed to secondary abstinence based on shame or guilt, they might have been less likely to participate in the interviews, and their experiences and opinions would not have been captured in these qualitative data.

Similarly, the survey also suffers from limitations. Social desirability bias or failure to accurately remember experiences from earlier years could have affected the truthfulness of responses. It is possible, however, that social desirability bias was reduced by the anonymity provided by online survey administration (King & Bruner, 2000). In addition, the quantitative data are also limited in terms of generalizability. Due in part to the sample’s location in Texas, it is not possible to use these data to make statements about students in other geographic areas. Furthermore, the sample’s representation of the population of students in their universities is equally questionable. Substantially lower rates of sexual activity among the sample suggest the potential of self-selection bias. Only 54.1% of the participants in this sample reported having had

vaginal sex, while national data show 86.1% of college students report having had sex (Center for Disease Control and Prevention, 1997). This may indicate the sample was biased in favor of abstinent behavior, possibly due to lower rates of sexual activity among this group of students, or perhaps, due to a research topic that was more appealing to abstinent individuals.

In spite of limitations, however, this research highlights important aspects related to the terminology used to describe secondary abstainers. While there is variation in the terms, the data from both qualitative and quantitative explorations suggest that – at least for these groups of participants – the language used (such as secondary abstainers' self-descriptions as "abstinent") may inaccurately suggest limited (or no) risky previous sexual experience. In spite of this, however, respondents interviewed in the qualitative portion of the study reported intent to truthfully convey their full sexual histories with both future sexual partners and health care professionals. This offers an important focal point for future research with secondary abstainers.

CHAPTER VI

CONCLUSION

The purpose of this dissertation was to explore the experiences of college students with secondary abstinence through two primary phases of research. The first phase explored – qualitatively – the self-reported experiences of a sample of college students with secondary abstinence (with emphasis on motivating, supportive, and hindering factors), and terminology they used to describe its practice. These qualitative data were used as the foundation for a second, quantitative phase examining the prevalence of secondary abstinence, factors associated with its practice, and terminology used to describe secondary abstainers.

The qualitative portion of the research focused on motivations for secondary abstinence as well as supportive and hindering factors. The most commonly mentioned motivation was related to religion, especially to attempts to relieve feelings of guilt. Additional motivations included fear of physical consequences, past negative experiences with sexual activity, wanting to "save" sex for the right person, desire to honor a partner's wish to abstain, desire to maintain power in a relationship, and identification of dissonance between personal values and behavior. In addition, participants described a variety of factors that they viewed as supportive for practicing abstinence, including religious factors, friends, parents/family, avoidance of physical consequences such as STIs and unwanted pregnancies, feelings about self, success in school, support from partner, and lack of current temptation. Non-supportive or

hindering factors included friends, alcohol consumption, perceptions of sex being widely accepted, and physical attraction and opportunity for sexual activity.

The quantitative phase of this research revealed a secondary abstinence prevalence rate of 12.5% in this sample of college students (total N = 1,133). Furthermore, regression models revealed attitude toward the behavior, subjective norm regarding abstinence, religious ties, and previous negative experiences were significant predictors of committing to secondary abstinence following sexual initiation. Participation in an abstinence education program significantly reduced the likelihood of committing to secondary abstinence in this sample. In addition, regression results revealed perceived barriers, less environmental manipulation, and greater religious ties were significant predictors of self-efficacy for abstinence.

Secondary abstainers scored significantly higher than primary abstainers on perceived barriers to abstinence, but scored significantly lower than primary abstainers on self-efficacy to remain abstinent, attitude toward behavior, subjective norm, and environmental manipulation scales. Secondary abstainers also scored significantly lower than primary abstainers on all three religious ties subscales – attachment and involvement, commitment, and beliefs. In addition, secondary abstainers scored significantly higher than primary abstainers on the following motivation subscales: power and past, feelings toward self, and success, school, and self. In contrast, secondary abstainers scored significantly lower than primary abstainers on the faith and important others motivation subscales.

Results from both phases of research were used to explore terminology used for secondary abstinence. Qualitative results provided the terms "virgin," "secondary virgin," "renewed virgin," "born-again virgin," and "abstinent" for use in the quantitative survey instrument. Survey results indicated the most familiar term for secondary abstainers was "born-again virgin," although the term secondary abstainers used most often to describe themselves was "abstinent."

This research on secondary sexual abstinence is unique in that it begins to fill a void currently unexplored in the health promotion literature. It appears to be one of the first estimates of the practice of secondary abstinence in a college sample. In addition, it provides valuable insight into a variety of motivating factors that play a role in decisions to become abstinent following sexual initiation, as well as motivators that may be unique to secondary abstainers. Increased understanding of the multiple facets of secondary abstinence, especially the various dimensions of motivation, may help health professionals interact more effectively with, and offer important guidance to, their clients/students. Further, it raises an important question regarding the potential effect that abstinence education may have on sexually experienced youth, a question which warrants additional attention in future research and program evaluation.

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APPENDIX A

PILOT TEST EXPLORATORY FACTOR ANALYSIS AND RELIABILITY ANALYSIS RESULTS TO SUPPORT DIVISION OF THE MOTIVATION (FOR ABSTINENCE) AND RELIGIOUS TIES SCALES

Table A.1. Exploratory Factor Analysis and Reliability Analysis Results to Support Division of the Motivation (for Abstinence) Scale

Scale	Components					
Item	1	2	3	4	5	6
Motivation for Abstinence						
My faith/religious beliefs	.887					
Sacred texts (Bible, Koran, etc.)	.900					
People in my faith community	.899					
My friends	.587					
My parents	.813					
My desire to avoid disappointing my family	.564					
The fact that I have previously contracted an STI		.665				
My participation in an abstinence education program		.546				
My desire to maintain power within a relationship		.446				
My lack of opportunity		.708				
The lack of current temptation		.785				
A lack of time to date		.755				
My desire to avoid emotional pain			.626			
My concern about pregnancy			.849			
My concern about contracting an STI			.835			
My desire to eliminate distraction in my life in order to be more successful				.735		
My desire to make good grades				.875		
A conservative A&M environment				.768		
Concerns about my body				.532		
My increased maturity					.493	
My desire to feel better about myself					.798	
My desire to avoid or relieve feelings of guilt					.799	
My partner						.847
My desire to protect my partner						.848
% of Variance explained	23.20	16.16	9.76	7.03	5.27	4.45
Reliability (Cronbach's Alpha) for scale	.89	.75	.80	.81	.67	.74

Table A.2. Exploratory Factor Analysis and Reliability Analysis Results to Support Division of the Religious Ties Scale

Scale	Component		
Item	1	2	3
Religious Ties			
I feel connected to the other people in my faith community.	.576		
I value the opinions of others in my faith community.	.687		
I like to follow the beliefs/behavioral standards held by my faith community.	.808		
It is beneficial to me to follow the beliefs/behavioral standards of my faith community.	.857		
I would be negative affected if I did not follow the beliefs/behavioral standards of my faith community.	.681		
I regularly attend worship services with members of my faith community.		.717	
I am regularly involved in the study of sacred texts with members of my faith community.		.898	
I am regularly involved in fellowship activities with members of my faith community.		.868	
My personal beliefs are in line with the beliefs of my faith community.			.714
I follow the beliefs outlined by my faith community.			.719
I am in agreement with my faith community's beliefs regarding sexual activity.			.775
I am in agreement with my faith community's beliefs regarding contraception and/or birth control.			.811
% of Variance explained	52.93	8.73	11.73
Reliability (Cronbach's Alpha) for scale	.86	.88	.87

APPENDIX B

RESPONSE RATES FOR PHASE 2 QUANTITATIVE DATA COLLECTION

Table B.1 Response Rates for Phase 2 (Quantitative) Data Collection

Campus	Survey Invitations Sent	Survey Invitations Returned	Survey Invitations Received (Assumed)	Surveys Completed	Response Rate
College Station	5100	72	5028	1081	21.5%
Galveston	240	1	239	32	13.4%
Kingsville	660	268	392	20	5.1%
Total Sample	6000	341	5659	1133	20.0%

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